NEW EQUIPMENT DIGEST

EQUIPMENT • IMPROVEMENTS • PROCESSES • MATERIALS • METHODS • APPLICATIONS • LITERATURE

Vol. 9 April, 1944 No. 4

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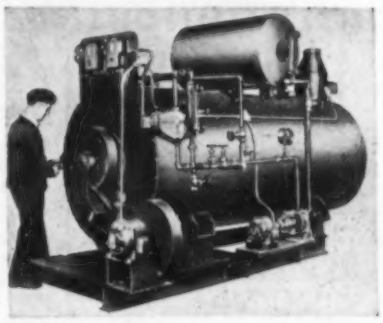
APR 22 1944
DETROIT

COMPACT STEAM BOILER



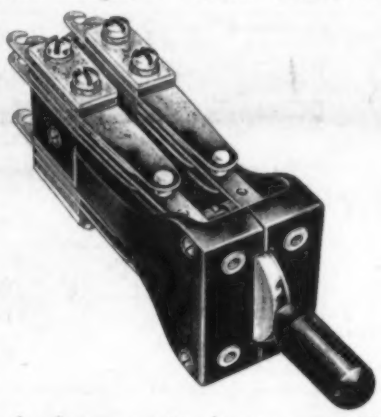
Occupying minimum of space, this Powermaster steam generating unit will develop 100 pounds steam pressure from 60-degree water in 18 minutes or less. Compactness and speed of steam generation adapts it for use in dehydration and food processing plants as well as in laundries, dairies and all industries where steam is required for processing, power or heat. Fully automatic in operation, this oil fired unit features 3-pass construction.

Removable back plate affords easy access for cleaning of tubes when required. Oil burner imparts rotary motion to flame, causing flame to hug walls of combustion chamber and thus assure maximum gas travel with high heat transfer. Built-in condensate return system adds to compactness and facilitates installation. Return condensate or water direct from supply line or both may be used as feed water. Sizes are available for practically all normal steaming requirements. Made by **Orr & Sembower, Inc.**, 800 Morgantown Rd., Reading, Pa.

▲ Mention Item NED-1847 when writing ▲

LIGHT-WEIGHT SWITCH

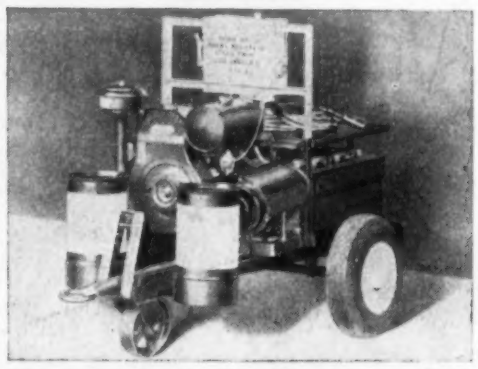
Fulfilling requirements for multi-circuit switch with decreased weight at no sacrifice of operating characteristics, Maco Featherweight switch weighs 3 ounces. Frame is molded of high-impact Navy specification 17P4 CFI-20 phenolic. Design assures uniformity of switching elements and continuous smooth operation.



Knurled inserts with full ¼-inch depth of thread are locked in place so that they cannot twist or pull out. Hook type solder terminals are tinned over all to facilitate wiring. Coin silver contacts, securely fastened in phosphor-bronze spring leaves, carry 10 amperes alternating current or 2 amperes direct current at 115 volts. Contacts may be ganged in any desired number and combination and with locking or spring return in either lever position. Made by **Metallic Arts Co.**, Windsor St., Cambridge, Mass.

▲ Mention Item NED-1848 when writing ▲

PORTABLE POWER UNIT



Adaptable for field use in starting aircraft engines, testing gun turrets, radios and other airplane electrical equipment requiring 24 volts direct current, Pony Express field service unit is mobile for towing or moving by hand. Unit is useful also as portable power plant for lighting and as source of power for soldering irons and many other operations.

Power unit consists of gasoline engine driven generator of 1200 watts capacity; voltage and current regulator; two heavy duty 12-volt batteries connected in series and chassis having two 16-inch steel wheels and one 8-inch caster wheel. Pneumatic tires can be furnished to those who qualify.

With this unit, desired voltage for airplane equipment can be maintained even when using high rate of discharge such as is necessary for starting engines and testing gun turrets. Radio equipment will not burn out because of excessive surges of voltage. Voltage always stays up to level desired. Made by **Rocky Mountain Steel Products Co.**, 1362 Wall St., Los Angeles, Calif.

▲ Mention Item NED-1849 when writing ▲

PLASTIC ENVELOPES

Developed to protect factory production records, blueprints, work orders and time sheets from soiling and moisture, K-M transparent factory card envelopes are made of plastic. Substantially made with bound edges, envelopes are flameproof, soilproof and moistureproof. They are available in all sizes in following four styles: open on one short end; open on one long end; open on one short end with two metal eyelets; open on one short end with loop for hanging up. Made by **Kingsbacher-Murphy**, 683-B Santa Fe Ave., Los Angeles 21, Calif.

▲ Mention Item NED-1850 when writing ▲

ETCHER AND DEMAGNETIZER

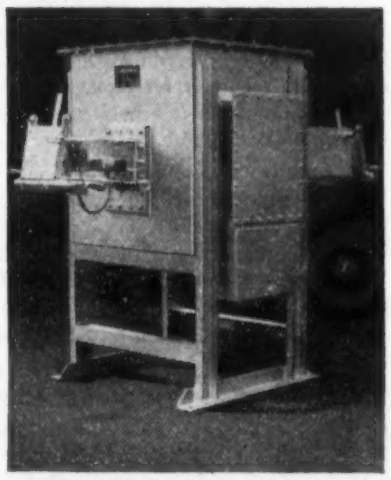
Available for instant use either as etcher or demagnetizer, this equipment is available in sizes to operate on any 115 or 230-volt; 25, 50 or 60-cycle alternating current power source. Small tools and parts are etched by placing them on work plate and using alloy stylus. Ground clamp is used for marking parts which are too large for work plate. Fourteen heats ranging from 90 to 1350 watts are readily available through use of high and low tap and 7 point switch. This gives required range for marking all iron, steel and alloy metals.

When used to demagnetize it is only necessary to turn switch on and proceed as with ordinary demagnetizer. Maximum rating is 5.5 amperes and overall pole area, 13½ square inches. Equipment is enclosed in durable case with removable hinged cover. Made by **Ideal Commutator Dresser Co.**, 1032 Park Ave., Sycamore, Ill.

▲ Mention Item NED-1851 when writing ▲

ELECTRIC FURNACE

Temperatures between 1800 and 2750 degrees Fahr. are obtainable with this line of electric furnaces which was developed particularly for sintering powdered metals. Built for mass production operation, they are equipped with preheat tunnel leading to high temperature chamber, and have water-jacketed cooling chamber. Entrance to preheat tunnel and exit on cooling tunnel are equipped with automatic flame curtains.



Gas-tight construction permits use of protective atmospheres, such as hydrogen, dissociated ammonia and mixtures of carbon monoxide, hydrogen and nitrogen. Sizes are available for both laboratory or manufacturing applications.

Applications include high temperature cementing of tungsten carbide dies, sintering of powdered ferrous and nonferrous metal parts, heating of electronic tube parts and variety of uses involving powder metallurgy. Furnaces also provide correct temperatures and atmospheric conditions for high temperature hydrogen brazing. Made by **Harper Electric Furnace Corp.**, 1457 Buffalo Ave., Niagara Falls, N. Y.

▲ Mention Item NED-1852 when writing ▲

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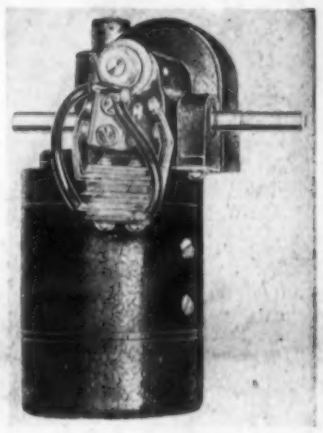
Read Carefully
CHECK AND PASS ON

CHECK	NAME AND TITLE	SEE ITEM NO.

BRAKING GEAR DRIVE



Prevention of overrunning is feature of this model B-1 gear unit for fractional horsepower electric motors. It stops motors instantly and thereby prevents overrun common in braking of electric power driven devices. Stopping action is obtained by brake which applies itself in either direction of rotation. It may be applied to any of extensive line of EMC fractional horsepower motors. Made by **Electric Motor Corp.**, 1204 State St., Racine, Wis.

▲ Mention Item NED-1853 when writing ▲

Do You Know?

■ BUILDING OF ROADS, airplane landing fields and other construction projects is speeded through use of new chemical method of preventing mud by making soil waterproof. Stabinol can be used to stabilize unsurfaced dirt roads in rural areas, or it can be mixed with soil that serves as base on main highways with hard wearing surfaces. Waterproof surface is obtained by mixing this resin compound with top few inches of soil. Developed by Hercules Powder Co., Wilmington, Del.

▲ Mention Item NED-1854 when writing ▲

Fireproof as well as flexible and long wearing, plastic upholstering material is being used in combat vehicles and as fireproof berth covering for bedding on Navy vessels. Fireproof compound is used as coating on fireproof base fabric. Resulting material is resistant to oil, gasoline, salt water and perspiration. Made by United States Rubber Co., 1207 Rockefeller Center, New York, N. Y.

▲ Mention Item NED-1855 when writing ▲

Anticipating heating or cooling requirements of any room by admitting hot or cold fluids to air conditioning unit in desired amounts automatically, newly announced "thinking" valve requires minimum of adjustment. It is also applicable to wide range of industries where heating and cooling liquids are required at different times and in varying amounts. Made by Carrier Corp., 302 S. Geddes St., Syracuse 1, N. Y.

▲ Mention Item NED-1856 when writing ▲

Covering metallic arc welding of tools and dies, sound slide film program assures proper application of tool steel welding electrodes. Two separate films comprise program which is available for use by manufacturers and educational institutions. Films and recordings also may be purchased outright, if desired, for training courses. Issued by Welding Equipment & Supply Co., 229 Leib St., Detroit, Mich.

▲ Mention Item NED-1857 when writing ▲

with PLASTIC ROCK!

Trowel a smooth, tough, plastic surfacing right over your old concrete or wood floor.

Plastic Rock comes complete, packed in barrels. Nothing more to buy. No application "formula" to confuse you. Simply mix and trowel right over old floor. Average depth one-half inch. Old floor Saturday is a new floor Monday. Also patches concrete to a perfect feather edge. Plastic Rock is absolutely spark-proof, skid-safe wet or dry, dustless, silent. Feels like cork under foot. Cannot splinter, crack, crumble, curl or loosen. Heavy loads on steel wheels actually improve it. Five-year old floors show no wear. Natural color is dark gray. Also furnished in red and brown. Used by U. S. Army, Navy and largest industries in America. Your contractor or your own crew can apply.

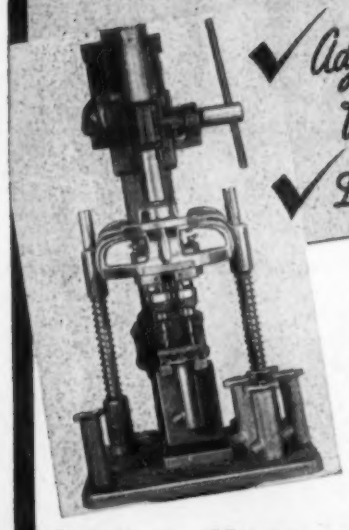
Ask for your copy of Report 220-4

UNITED LABORATORIES, INC.
16804 EUCLID AVENUE · CLEVELAND 12, OHIO
In Canada—STORRAR MFG. COMPANY, Weston, Ontario

▲ Mention Item NED-1858 when writing ▲

TWO SPINDLE *Adjustable* DRILL HEADS

Drill Two Holes At Once



✓ *Adjustable Centers from 1/2" to 6"*

✓ *Drill Capacity 0" to 5/8"*

Sleeve and overarm types . . . in several sizes. Will double output of any single spindle drill press.

Quickly adjusted to desired drill centers from 1/2" to 6".

Send for bulletin.

LINDERME MACHINE & TOOL CO., INC.
12263 COYLE AVE., DETROIT 27, MICH.

▲ Mention Item NED-1859 when writing ▲

DOES THE WORK OF A WHOLE GANG OF MEN!

BROWNIE FORK LIFT TRUCK

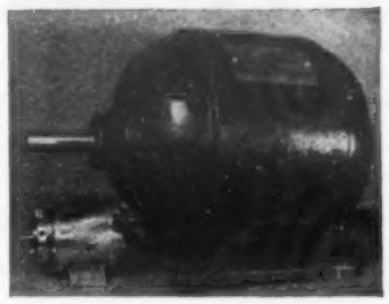
Loads and stores materials of all sizes and shapes (3000 lbs. capacity; 108" lift)—more speedily, easily, economically. Wheel base 40"; turning radius, 67". Rugged, dependable. Investigate!

Write for Descriptive Bulletin #103

BERRY *Motor Car Company*
Mfrs. of Industrial Lift Trucks and Tractors
LOCUST AT 22ND · ST. LOUIS 3, MO.

▲ Mention Item NED-1860 when writing ▲

ELECTRIC MOTOR



Operating at speed of 120,000 revolutions per minute, this electric motor was developed for application to internal grinding machines used in finish grinding small holes, many less than ¼-inch in diameter, in vital war parts. Although motor will not be available for general use until after war, another possibility for its use is in driving small drill chucks for drilling tiny holes in metal, using drills 1/32 inch in diameter and less.

With normal voltage applied at 2000 cycles, motor reaches full speed in less than 1 second. It is rated at 3 horsepower and weighs but 7 pounds. Motor is so small that it fits into palm of person's hand. Rotor is scarcely larger than man's thumb. Tests that motor has passed successfully at 120,000 revolutions per minute include 8-hour continuous runs at rated horsepower as well as grinding tests with tiny grinding wheel mounted directly on motor shaft.

Problems entering design of motor were largely of mechanical nature. Since utmost in smooth operation is essential to precision grinding, bearings with practically perfect dynamic balance were required. Special oil-mist lubricated type of bearing is used. Amount of material used in motor is so small, with consequent reduction in radiating surface, that water cooling is utilized, ½ gallon per minute being used. Made by **General Electric Co.**, Schenectady, N. Y.

▲ Mention Item NED-1861 when writing ▲

OPTICAL CURVE GENERATOR

Incorporating hydraulically actuated system for automatic cycle operation, this model No. 4 automatic grinder applies machine tool precision to optical industrial equipment. Semi-skilled operator can run one or several machines and need only insert lens or block in holder, press button to start cycle and then remove work after machine has shut-off automatically.

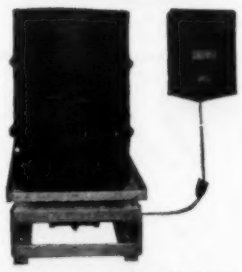
Grinding method using diamond tools of suitable grit is claimed to effect savings of up to 75 per cent in time as compared with other methods of rough and finish grinding optical flats and spherical lenses of all types and radii. Integral coolant system has separator for removing ground glass from coolant. Positive lubrication is provided on spindle speeds up to 6000 revolutions per minute.

Maximum lens diameter which may be ground is 8 inches. Power is supplied by 1/3 horsepower motor. Spindle speed is variable from 2000 to 6000 revolutions per minute through interchangeable pulleys. Hydraulic control unit is driven by 1/3 horsepower motor. Made by **W. F. and John Barnes Co.**, Optical Div., 337 S. Water St., Rockford, Ill.

▲ Mention Item NED-1862 when writing ▲

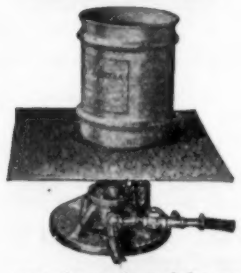
Get more out of YOUR Containers by putting more into them with

SYNTRON High-Speed Electric VIBRATORY PACKERS



3,600 vibrations per minute—rheostat controlled power for variable adjustment to meet material requirements. Capacity from large barrels to small containers.

SYNTRON "Explosion-Proof" Water Operated HYDRAULIC JOLTERS



100 short, sharp jolts per minute are particularly effective on packing light, fine, fluffy materials and for general use in hazardous locations—under explosive atmospheric conditions, etc.

Write us about your problem

SYNTRON CO., 405 Lexington, Homer City, Pa.

▲ Mention Item NED-1863 when writing ▲

BEFORE YOU PUT HOLES IN

SHEETS

ANGLES

CHANNELS

BY *any* METHOD . . . *investigate*

WALES

HOLE PUNCHING EQUIPMENT

FEATURES

1. Usual time-consuming adjustments of conventional set-ups are eliminated.
2. Punch and die held in alignment by holder.
3. Each unit is independent and self-contained.
4. Straight line, staggered or scattered patterns punched with same units.
5. Same units may be used interchangeably on press brake & stamping presses.
6. Nothing attached to press ram.
7. Individual units may be instantly removed or reset.
8. Interchangeable punches.
9. Die setting time and press "down time" reduced to minutes.
10. Same units may be used and reused in active patterns.

● Take up this invitation by putting your hole punching problems up to Wales-Strippit.

Hundreds of metal fabricators are now using Wales Equipment *profitably.*

Wales-Strippit manufactures a complete line of hole punching units and are prepared to develop and manufacture hole punching equipment for special operations and techniques.

"There's Always Something New in the Wales Line."

Write for Catalog C.

WALES-STRIPPIT CORP.
363 PAYNE AVENUE NORTH TONAWANDA, N. Y.

▲ Mention Item NED-1864 when writing ▲

Contact KAYDON *of Muskegon*
For Unusually Large, High Precision Bearings

BALL and ROLLER BEARINGS

Standard and Special

From 6" Inside Diameter to 100" Outside Diameter
Commercial Finish or Ultra-Precision

Radial Ball Bearings · Thrust Ball Bearings
Radial Roller Bearings · Thrust Roller Bearings
Taper Roller Bearings

Straight or Self-aligning · Extra Heavy Duty or Special Light Type
Light Weight Non-Metallic Cages or Standard Bronze Type

★ *Early Delivery* ★

Also any type of

PRECISION MACHINE WORK OR GRINDING

to unusual accuracy in large diameters

Atmosphere Hardening · Flame Hardening · Precision Heat Treating
Metallurgical Laboratory · Microscopy and Physical Testing

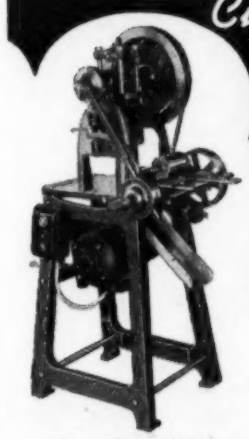
For excellence in production of extremely precise, unusually large ball and roller bearings

THE KAYDON ENGINEERING CORP.
McCRACKEN STREET · MUSKEGON, MICH.
Specialists in Difficult Manufacturing

▲ Mention Item NED-1865 when writing ▲

DIEBEL Hi Speed 550 R.P.M. STAMPING PRESS

Cuts Production Time



FROM 800 hours TO 35 hours ON SINGLE WAR-TIME ORDER

Press Pays for Itself on just ONE job!

Stamping production of small aircraft part is boosted from 400 per hour to 12,000 per hour — costs cut from $800 to $30.

(Because of war restrictions, illustration or description of part is prohibited.)

The Diebel Hi-Speed Press is the ideal machine for all small punch work. It saves power, labor, space, money.

WRITE FOR BULLETIN

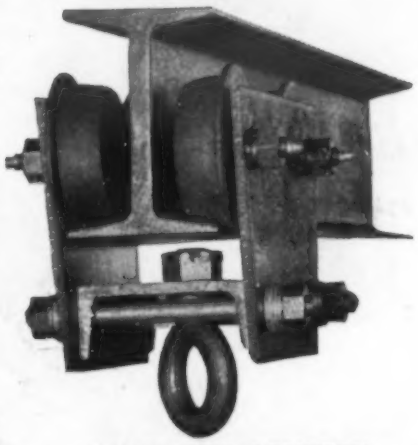
SEND SAMPLES OR BLUE PRINTS — QUICK DELIVERY

DI MACHINE CORP.
DIVISION OF DIEBEL DIE & MFG. CO.
3652 N. LINCOLN AVE. CHICAGO

▲ Mention Item NED-1866 when writing ▲

GRAY TROLLEYS

For Any Size I-Beam



GRAY TROLLEYS are designed to meet the demand of industry for a trolley with closest possible headroom. They safely and efficiently raise loads, are easily transferable through the shop, and are equipped with New Type, Thoroughly Sealed, Gray Ball Bearing Trolley Wheels.

IMMEDIATE DELIVERY

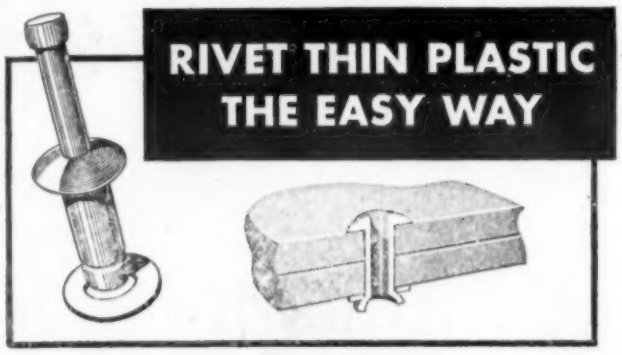
Long, trouble-free service is what you get with every GRAY TROLLEY and that's an important consideration today. Made in 250-lb. to 2-ton standard capacity sizes adjustable to suit various I-Beams. We would like you to have our bulletin which describes and illustrates in detail our TROLLEYS and our TROLLEY WHEELS. Send for it now!

GRAY HUB COMPANY

Incorporated 1922

17265-17403 GABLE AVENUE DETROIT 12, MICHIGAN

▲ Mention Item NED-1867 when writing ▲



with CHERRY BLIND RIVETS

Cherry Rivets make ideal fasteners for pliable or brittle material because they are headed by a pulling force. There's no hammering on rivet heads—no bucking bar needed.

WRITE FOR HANDBOOK A-43—Get the complete story on Cherry Rivets—how they will save you time and money on tough riveting jobs. Address Department A-113, Cherry Rivet Company, 231 Winston Street, Los Angeles 13, California.

CHERRY RIVETS, THEIR MANUFACTURE AND APPLICATION ARE COVERED BY U.S. PATENTS ISSUED AND PENDING

Cherry Rivet *Company*
LOS ANGELES, CALIFORNIA

▲ Mention Item NED-1868 when writing ▲

SHERRON "ACOUSTIC"

COMPLETE TELEPHONE BOOTHS

In use by major telephone systems and in scores of war plants and shipyards, Sherron "Acoustic" Booths are providing valuable service wherever privacy and freedom from outside noise are required. Rigidly constructed of sheet steel, Sherron booths are complete in all details; delivered ready for telephone instrument installation.

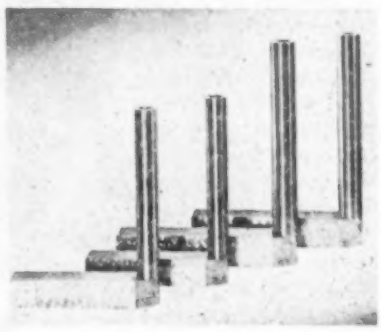
WRITE FOR DESCRIPTIVE BULLETINS.

Industrial Division

SHERRON METALLIC CORP.
1201 Flushing Ave. Brooklyn, N. Y.

▲ Mention Item NED-1869 when writing ▲

PRECISION SQUARES



Line accuracy, wide checking range and constant accuracy within 0.0001 inch are claimed for this line of industrial tri-squares. Hollow cylindrical post provides temperature stability, eliminating strains and stresses common to solid construction. As contact against side of cylindrical post is possible only at point of tangency, line accuracy is always obtained. Materials used in this tool are aged, heat treated and tested to 60-64 Rockwell C hardness.

Square is available in 4, 6, 8, 10, 12, 14 and 16-inch sizes. It may be reconditioned readily by factory. Made by **Thomas Tool & Machine Co.**, 68 North Park St., Pontiac 14, Mich.

▲ Mention Item NED-1870 when writing ▲

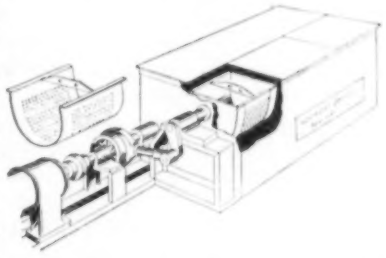
FASTENING DEVICE

Retaining its self-locking torque even after many removals under service conditions, No. A6103H-1032 Hi-Stress Speed Nut is light weight, one-piece integral unit. Its unusually low installation torque allows speedy insertion of screws and bolts. It is interchangeable with nut plate AN362 for high temperature applications in all structures. Nut conforms to AAF specification No. 25531 and has been approved by Army Air Forces. Made by **Tinnerman Products, Inc.**, 2044 Fulton Rd., Cleveland 13, O.

▲ Mention Item NED-1871 when writing ▲

SCRAP ROD WASHER

Rigidly built and of welded construction, this rod washer is designed to effect efficient cleaning of scrap welding rods without bending them and thus permit their reuse. Each machine is equipped with two sets of baskets, four for 14-inch rods and two for 18-inch rods, one set being loaded while other set is in machine. Baskets are made of wear resisting material. Baked rods are cleaned in 10 minutes and unbaked rods in 4 minutes. Load capacity is about 500 pounds.



Unit consists of washing tank with built-in steam heating coil. Electric immersion heaters can be supplied if desired. Drive consists of 5-horsepower gear motor driving eccentric having adjustable stroke. Crank mechanism gives rocking motion to basket. Machine is also adaptable for washing and degreasing of small machine parts. Made by **Aufhauser Brothers Co.**, 295 Madison Ave., New York, N. Y.

▲ Mention Item NED-1872 when writing ▲

★ NOW TRUCKS HAUL HOT MATERIALS AT 1500° F

Illustrated in this ad is another recent Dempster development, worked out through the cooperation of our engineers and those of the buyer. This one for handling HOT materials, on a truck, direct from furnaces, at temperatures of 1100 to 1500° F, in one of the nation's largest metallurgical war plants. These bucket-bodies have a capacity of over four cubic yards each. Dempster-Dumpster hoisting units are available for such service with capacities for lifting, hauling, and discharging automatically up to 7½ tons pay load.

These special bucket-bodies are hung against the bottoms of [illegible] they are filled with hot molten material, a single [illegible] Dumpster serves each bucket-body, in turn.

[illegible]'s a Dempster built for every conceivable type of material [illegible] job for speeding up production, cutting costs of trucks [illegible] saving man power.

Write or Wire now for—"How the Dempster-Dumpster Works". Dempster Brothers, Inc., 544 Springdale, Knoxville 17, Tennessee.

DEMPSTER DUMPSTER

▲ Mention Item NED-1873 when writing ▲

Insures Longer Life for Machines—Motors. Cuts down wear. Prevents electrical shorts. Blows low pressure high velocity dry air. Picks up not only heaviest dust and dirt, even if moist, but metal chips, grindings and other abrasive materials and traps them in 12 gal. metal tank—preventing damage to fan, housing and bag. Full 1 H.P. Motor.

DETACHABLE HAND CLEANER

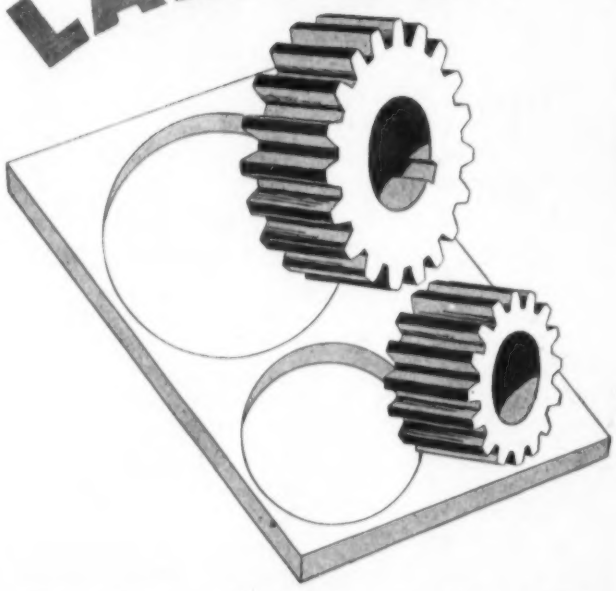
Available as a separate unit.
Write for FREE Descriptive Literature

IDEAL *Sycamore*
★ IDEAL COMMUTATOR DRESSER CO ★
1032 Park Ave. Sycamore, Ill.
Sales Offices in All Principal Cities
In Canada: Irving Smith Ltd., Montreal, Quebec

▲ Mention Item NED-1874 when writing ▲

MECHANICAL TYPE

LAMICOID



GEARED TO THE NEED FOR SILENT STRENGTH

Silent and smooth-running, LAMICOID gears and pinions may be fabricated to any diameter from sheet stock, furnished in any specified thickness. Selected cotton fabrics, laminated with special resins, provide resistance to impact, shock, moisture, heat, oil and dilute acids. Gear blanks are easily machined, permitting fine pitch gears or openings close to rim.

A Few of Many Lamicoid Applications

Spacers, valve discs, cams and thrust washers are among the countless forms readily blanked out from LAMICOID sheets, which are furnished in standard sizes of 36" x 42" in any desired thickness. Rods and tubes are available in any specified size. Colors: Natural and Black (Chocolate, sheets only).

LAMICOID, a replacement rather than a substitute material, is finding new industrial applications almost daily, some of which may provide better performance in your plant operations. Our engineers will gladly outline these uses for you...or help you to develop LAMICOID applications for your own purposes.

MICA INSULATOR COMPANY

200 VARICK STREET, NEW YORK 14, N. Y.

Chicago: 600 West Van Buren St. Cleveland: 1276 West 3rd St.
Detroit: Book Building Cincinnati: 3376 Meyer Place
Boston: 285 Columbus Avenue

▲ Mention Item NED-1875 when writing ▲

RYERSON STEEL IN STOCK

Call Ryerson when you need steel — any kind, shape, or size. Large stocks are available at ten convenient plants. Ask for a Ryerson Stock List — your guide to prompt shipment of steel.

Principal Products Include:

Bars • Shapes • Structurals • Plates • Sheets • Floor Plates • Alloy Steels • Stainless Steel • Shafting • Screw Stock • Wire • Mechanical Tubing • Boiler Tubes • Reinforcing Steels • Tool Steels • Babbitt • Nuts • Bolts • Rivets • Welding Rod • Etc.

JOSEPH T. RYERSON & SON, Inc.

Plants at:

CHICAGO, MILWAUKEE, ST. LOUIS, CINCINNATI, DETROIT, CLEVELAND, BUFFALO, BOSTON, PHILADELPHIA, JERSEY CITY.

▲ Mention Item NED-1876 when writing ▲

FOR HEAVY HANDLING OR TIME AND LABOR SAVING

Savings still add up!

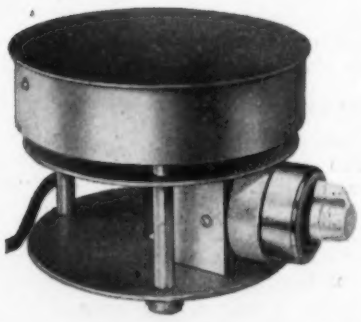
● Often, as in the handling of heavy transformers — shown here, there is no substitute for conveyors — but Logan conveyor equipment is also installed to facilitate the moving of smaller and lighter units — for saving manpower or time. In either case the savings still add up! Why not unload your handling problems on Logan? Write for free catalog. The Logan Company, Inc., 215 Cabel St., Louisville, Kentucky.

Logan Conveyors

PUT *FLOW* INTO PRODUCTION

▲ Mention Item NED-1877 when writing ▲

Laboratory people all like this ELECTRIC HOT PLATE



Complete insulation and baffles confine heat to the top surface.

Easily handled while operating.

Can be used safely on wooden surface.

Switch contacts and electric connections out of heat zone.

Non-warping top, machined flat.

Temperature uniform over entire heated surface.

Heated by enduring, economical and efficient Chromalox unit.

Three-heat switch gives wide control range

Picture shows Type ROPH, adapted to heavy duty laboratory work. In five capacities, 660 to 2000-w.

Also available in vapor-proof Type ROVP, with all electrical connections sealed.

CHROMALOX

Electric Heating Units

are made in types for all industrial heating needs. Write for the Chromalox Catalog. In specific problems, use our engineering cooperation.

EDWIN L. WIEGAND COMPANY

7509 Thomas Blvd. Pittsburgh 8, Pa.

▲ Mention Item NED-1878 when writing ▲

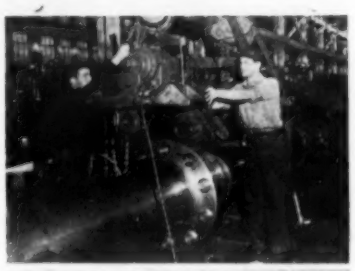
MARKING MACHINE

Intended for production marking of hose couplings, this No. 926S bench type marking machine produces up to 20 parts per minute. Design may be altered to accommodate other parts of like nature. Die holder uses solid dies or interchangeable type. To accommodate different sizes of pieces to be marked, series of ground plates is slipped over vertical rollers to bring each piece into marking position. Marking depth is closely controlled by two fine pitch adjustment screws. Compensation may be made for pieces with slight taper.

With exception of die holder and operating handle, all moving parts are covered by cast iron base. Integral gearing permits marking operation to be performed with minimum of effort. Machine has lugs for fastening it to bench. Made by The Acromark Co., 7-11 Morrell St., Elizabeth 4, N. J.

▲ Mention Item NED-1879 when writing ▲

SHAFT FLANGE REAMING



Line reaming of taper holes through line shaft flanges is performed accurately and within minimum of time through use of this portable reaming machine. Taper holes are produced to tolerances of 0.001 inch or less for fitted bolts. Complete portability of this line reamer permits work to be done in shipyard or in shaft alley of vessel. Equipment is also adaptable for wide range of industrial operations.

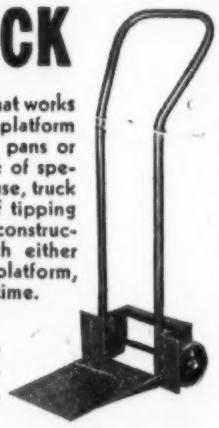
Assembly has three basic parts. Four cast iron cradles or pedestals line up separate shafts, if required. Reaming unit is frame holding reamer and standard shaft. Set of reaming tools, as shown, completes equipment. Machine is mounted on flange of line shaft coupling and is aligned with hole that has been rough drilled to predetermined size. Alignment is done by inserting plug in hole adjacent to one being reamed.

Excess stock is removed from rough drilled holes by "porcupine" tool, shown in center of lower illustration. This roughs out hole to within 1/16 inch of nominal size. Roughing reamer is then inserted to remove stock to within 0.01 to 0.012 inch. Next, second reamer completes job. Shaft is rotated and machine indexed to position for second hole. This operation is repeated until entire flange is reamed.

Cradles or pedestals are designed with leveling screws for lining up separate shafts and each cradle is equipped with cast rollers for revolving shafts. Entire assembly is easily handled by crane of chain hoist. Reamer is driven by 1½ horsepower electric motor through reduction drive. Developed by Tool Engineering Div., Joshua Hendy Iron Works, Room 516, Rialto Bldg., San Francisco 5, Calif.

▲ Mention Item NED-1880 when writing ▲

SHOVEL TRUCK



Reduce handling costs with this truck that works like a shovel—a kick of the foot slides platform under the load easily. Boxes, bags, pans or barrels cannot rub on wheels because of specially designed guards. When not in use, truck occupies small space. No danger of tipping over if accidently bumped. All-steel construction, Hyatt bearings, equipped with either steel or rubber wheels, large sturdy platform, this shovel truck is built to last a lifetime.

A SPECIAL DESIGN with shorter nose and handle is available for handling kegs in screw machine plants.

ALL-STEEL WELDED CONSTRUCTION

SCOOP TRUCK

The same sturdy construction as the shovel truck. In addition to handling boxes, cases, kegs, etc. will also handle long round or flat bar stock or similar loads normally requiring a much larger truck. Simply scoop load on. Made in three sizes: 18" x 24"—20" x 28"—24" x 30".

Either of the Above Trucks on 10-Day Approval

FISHER EQUIPMENT COMPANY

15133 LIVERNOIS ST. DETROIT 21, MICH.

▲ Mention Item NED-1881 when writing ▲

SAFE-LINE

WIRE ROPE CLAMPS

Write for details of this—the only PERFECTED wire rope clamp on the market. Used by the Armed Forces and thousands of industries.

NATIONAL PRODUCTION COMPANY

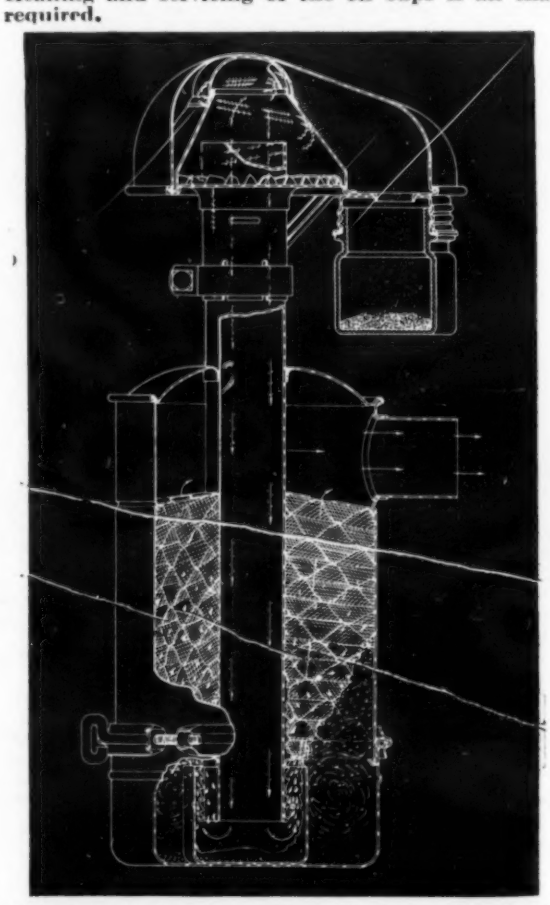
4857 ST JEAN AVENUE DETROIT 13, MICHIGAN

▲ Mention Item NED-1882 when writing ▲

DONALDSON Oil-Washed AIR CLEANERS

Note These DONALDSON Features

1. Non-plugging element: Manufactured from lead-coated wire. Open area of element pre-determined and can be uniformly controlled in manufacture.
2. Cleaning is done by scrubbing: The element functions as a condensing chamber . . . not as a filter . . . thereby minimizing the possibilities of dirt becoming lodged in the element.
3. Ease of service: Under normal operating conditions cleaning and servicing of the oil cups is all that is required.



4. Submerged air inlet insures displacement of oil and high cleaning efficiency regardless of load or operating speed.
5. One hundred per cent pressure tested.
6. For extreme dust conditions pre-cleaners can be provided to increase the time between service periods.

Our engineers will be glad to help YOU work out the best Donaldson installation for your product. Write us . . . no obligation.

DONALDSON CO., INC.

666 Pelham Blvd., St. Paul, Minn.

▲ Mention Item NED-1883 when writing ▲

HOW REMOVABLE STICKERS INCREASE WAR PRODUCTION

Learn more about these amazing peelable production stickers that are applied without moistening, stick to any smooth surface, yet are easily removed when their work is done. The booklet shows their many time-saving uses at Douglas, Bendix, Consolidated, Buick, Pratt and Whitney, Briggs, General Electric, U S. Signal Corps, Allis Chalmers, etc. Write Dept. NED-4.

Write for Folder Showing Many Proven Uses of These Amazing Stickers

AVERY
Kum-Kleen
PRODUCTION STICKERS

AVERY ADHESIVES: 451 E. 3rd St., Los Angeles 13
New York • Boston • Detroit • Pittsburgh • Chicago
Kansas City, Mo. • In Canada: Enterprise Sales, Toronto

▲ Mention Item NED-1884 when writing ▲

FOOD INDUSTRY PROFITS WITH **CAMBRIDGE** METAL PROCESSING BELTS

- Bakeries
- Canneries
- Candy
- Dehydrated Foods
- Fresh Produce
- Fruit Packing
- Ice Cream
- Meat Packing
- Packaged Foods
- Quick Freezing
- Sea Foods

Cambridge Belts, flexible lengthwise, but rigid crosswise, permit special treatment of products simultaneously with their movement on the belt. Their open mesh permits free circulations of water, steam, air or heat. Adaptable to all food processing. FREE TECHNICAL Book on request.

THE CAMBRIDGE WIRE CLOTH COMPANY
CAMBRIDGE 13, MARYLAND

▲ Mention Item NED-1885 when writing ▲

All of the great variety of small parts you see in this picture were deburred successfully, in quantity, by the Roto-Finish process. This revolutionary new method of mechanical finishing is used with equal success on steel, brass, aluminum, stainless and nickel steel parts . . . on castings up to 75 pounds, as well as the tiny, delicate, threaded parts shown here.

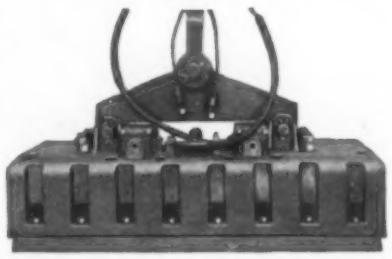
Hundreds of plants are using Roto-Finish today to effect important savings in time and costs over hand methods of de-burring, grinding, honing, and buffing. Precision tolerances are maintained and far better finishes secured. Send for complete information and let us process samples of your parts—without charge.

THE STURGIS PRODUCTS CO.
265 JACOB ST., STURGIS, MICH.

▲ Mention Item NED-1886 when writing ▲

BILLET & RAIL MAGNETS

Of heavy duty construction, type BR magnets are designed for handling either hot or cold rails or billets. They may be used also for lifting bar stock, pipe, structural shapes and similar magnetic materials. In many cases, magnets are worked in pairs, being suspended from spreader bars and operated from single controller. Coils are circular and strap-wound, resulting in short length mean-turn and tight winding which gives high magnetic capacity. All pole shoes are renewable.



Coil terminals are housed in waterproof box with removable cover. Flexible outer leads have quickly detachable cable connectors. Rigid suspension yoke of rolled steel is supplied when magnets are operated in pairs. Optional arrangement is chain suspension for single magnet operation. Three sizes are available. Made by Electric Controller & Mfg. Co., 2694 E. Seventy-ninth St., Cleveland 4, O.

▲ Mention Item NED-1887 when writing ▲

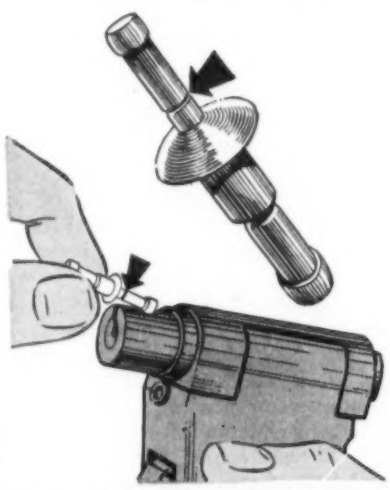
CARBIDE TIPPED TOOLS

Designed for cutting steel, cast iron, nonferrous and nonmetallic materials, Malta line of cemented carbide tipped tools includes ten different styles in wide range of sizes and three grades of tips. Grade MF is for miscellaneous finishing, grade SF for steel finishing and grade CR for coarse roughing operations. Red, white and blue colored shanks, respectively, insure proper grade selection. Tools are rust-proofed to afford protection during long storage. Made by Jessop Steel Co., 555 Green St., Washington, Pa.

▲ Mention Item NED-1888 when writing ▲

BLIND TYPE RIVETS

Recent improvement incorporated in self-plugging type Cherry blind rivets includes addition of notch in pulling mandrel. This notch inhibits flow of metal in upsetting process used in forming pulling head and results in more uniform unit structure. Another claimed advantage is that shorter mandrel is required, effecting savings in material as well as providing for shorter drawbolt movement.



These blind rivets are designed to speed up production, especially where there is access to only one side of work. Fastenings are headed-up by hand or power gun and no bucking bar is needed. Standard drilling and dimpling tools may be used. Made by Cherry Rivet Co., 239 Winston St., Los Angeles 13, Calif.

▲ Mention Item NED-1889 when writing ▲

SHOP STOOLS

RUGGED, DURABLE, BUILT TO LAST!

Model SW-36 Seat Height adjustable to 24, 26, 28 and 30 inches.

IMMEDIATE DELIVERY!

Check Your Requirements from these Popular Styles

- ★ Swivel Stools With Corrective Back Rests
- ★ Stationary Stools With Adjustable Back Rests
- ★ Cycle-Seat Stools
- ★ Stationary Stools With Inverted Back Rests

● Here's a sturdy, rugged, heavy-duty stool designed to meet ALL factory requirements. It's adjustable to four heights . . . It's built to stand rough treatment and the large comfortable swivel seat enables workers to perform their jobs quickly and efficiently. The "corrective" back rest preserves needed energy for fatigue periods.

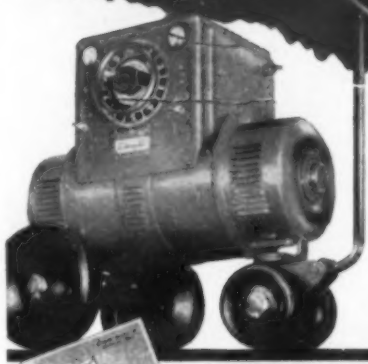
Send for catalog featuring the most complete line of industrial seating in the country. Years of experience in the furniture business enables us to build into stools the quality necessary to withstand hard usage.

Jobbers & Salesmen! Territories Open. Write for details.

SPRINGFIELD FURNITURE WORKS
502 West Euclid Avenue · Springfield, Ohio

▲ Mention Item NED-1890 when writing ▲

"FINE ADJUSTMENT" such as Hobart's is becoming more and more desirable in ARC WELDING



Good welds depend on fine adjustments—that's why Hobart with its 1,000 combinations of voltage and current, and its exclusive remote control is the choice of particular welders and production men everywhere. Hobart welders, gas or electric drive, are *now available* for important work. Ask us for delivery dates.

Exclusive Remote Control —lets operator get fine adjustment right at the work.

"Practical Design for Arc Welding" Design sheets that show how welding can be used on hundreds of applications. Ask for Initial Sheets Free.

HOBART *Simplified* **ARC WELDERS**

HOBART BROTHERS CO. Box ND-44, TROY, OHIO, U.S.A.

"One of the World's Largest Builders of Arc Welders"

▲ Mention Item NED-1891 when writing ▲

TIMED
Automatic Control

For processes requiring pre-determined timing cycles, Foxboro Time-Cycle Controllers provide uniformly-exact, automatic operation. For example, in digesters they control the "cook" through successive periods at different pressures . . . in drying ovens, they control temperature and humidity on definite schedules.

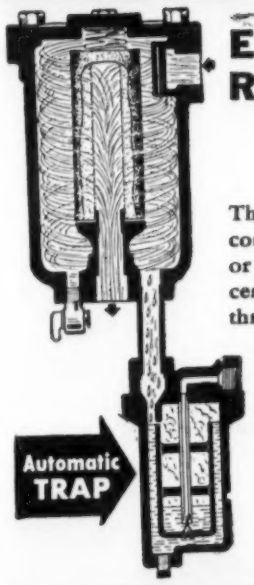
Foxboro Time-Cycle Controllers are available for timed control of temperature, level, pressure, humidity or flow. Instrument control point is set by cams easily cut from inexpensive calibrated blanks.

Write for detailed Bulletin 241. The Foxboro Company, 42 Neponset Ave., Foxboro, Mass., U. S. A. Branches in principal cities of United States and Canada.

FOXBORO Reg. U. S. Pat. Off. TIME-CYCLE CONTROLLERS

▲ Mention Item NED-1892 when writing ▲

Poro-Stone Filtration
FOR COMPRESSED AIR



EFFICIENTLY REMOVES:

OIL, WATER
PIPE SCALE

The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation. Write for complete data—Bulletin 104.

R. P. ADAMS CO., INC.
63 Chicago St. • Buffalo, N. Y.

ADAMS *Poro-Stone* AIR FILTER

▲ Mention Item NED-1893 when writing ▲

Premier

HEAVY DUTY INDUSTRIAL BLOWERS

★ Premier Heavy Duty Blowers range from ¼ H.P. to 1 H.P.—and cover a range of hundreds of uses in today's busy war production plants. They're equally efficient in both production and maintenance work—and their precision construction and all-around high quality assure trouble-free performance. They are quickly convertible to suction work with available attachments.

Model No. 66—¼ H. P.
Model No. 146—⅝ H. P.
Model No. 150— 1 H. P.

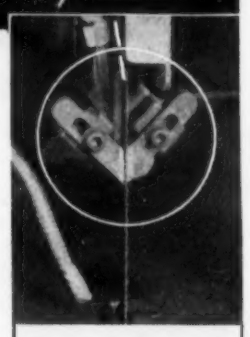
Write for descriptive literature, prices, full information

Electric Vacuum Cleaner Co., Inc.
1742 Ivanhoe Road • Cleveland 10, Ohio

▲ Mention Item NED-1894 when writing ▲

AH—THERE'S THE RUB!

WHERE THERE'S WEAR,
KENNAMETAL-IZE
to make machines Perform Efficiently up to 250 times as long



KENNAMETAL inserts on band saw guides

Is there a "rub" in your machine design—a point where abrasive wear threatens to impair enduring precision performance? Then . . . use a Kennametal insert, a unique cemented carbide composition that is 100 to 250 times as wear-resisting as steel. Kennametal is so hard (up to 80.6 on the Rockwell C scale) that when used as the cutting edge of machining tools, it bites through 550 Brinell steel at lightning speed! Inserts of Kennametal can be easily incorporated into "wear-areas." They are supplied as follows . . .

(1) accurately formed to desired shape, for brazing and finish grinding in your own shop . . .

(2) mounted on parts furnished by you, after which finishing can be done either by you or by us . . .

(3) embodied in complete parts produced by us.

The photo at the right illustrates a typical instance where a "rub" that ruined precision operation was overcome by using wear-defying Kennametal. Our engineers will show you how Kennametal can erase the "rub" in your machines. Write for particulars.

KENNAMETAL
Trade Mark Reg. U.S. Pat. Off.

KENNAMETAL Inc.
171 Lloyd Ave., Latrobe, Pa.

SUPERIOR CEMENTED CARBIDES

▲ Mention Item NED-1895 when writing ▲

TORSION METER

Developed in collaboration with Gruen Watch Co. and Manross Div. of Associated Spring Corp., this torsiometer is comparator which provides means for precision measuring torsion of small spiral springs. Direct reading can be made in millimeter-grams on graduated Manross scale. This permits identifying and classifying of springs as to torsion before assembling in instruments.

It is estimated that this equipment will conserve from 5 to 10 per cent of labor assembling cost. When used, it will no longer be necessary to use trial assembling, disassembling, cutting, fitting and other time consuming operations. When torsion of spring is known prior to assembling, higher uniformity in finished product can be maintained.

Meter will accommodate springs up to 2⅞ inches in diameter with maximum torsion capacity of 49.5 millimeter-grams. Inner end of spiral spring to be checked is attached to center post. Outer end is grasped by suspended tweezers. Outer marker is set at 120 on scale which represents zero point. Dial is then turned one complete revolution. Point at which indicator rests on scale represents torsion classification of spring. This operation may be performed by unskilled workers. Accuracy of instrument is indicated by its consistent repeat readings. Made by **The Sheffield Corp.**, 1530 E. Third St., Dayton 1, Ohio.

▲ Mention Item NED-1896 when writing ▲

LINE BLINDS

Designed to be operated by one man to effect positive and permanent shut-off or to open line in about 1 minute, two types of line blinds have enclosed bodies to prevent spilling of line fluid while plate is being removed. Bolted type blind, designated model BW30, is available in sizes from 2½ to 12 inches of all steel construction. All flange nuts as well as stud for spreading flanges apart when changing plate or spectacle are designed for turning with straight bar. Plate or spectacle may be had with squeeze type or pressure seal packing retained in annular groove in plate or it may be smooth for use with flat gaskets. Ends are threaded or beveled for welding as preferred by user. Simplified design makes it possible to offer this type blind at moderate cost.

MODEL BW30—All-Steel, Bolted Type Line Blind.

Union type blind is also made of steel and is available in ¾-inch sizes and larger. It consists of two subs, which may be screwed or welded in line, and bar operated nut slotted to receive plate and flat gaskets. When nut is turned to left faces of subs are spread enough to release plate. Turning nut to right draws subs together so that plate is tightly clamped between them and positive seal is effected. Made by **Hamer Oil Tool Co.**, 2919 Gardenia Ave., Long Beach 7, Calif.

▲ Mention Item NED-1897 when writing ▲

CONTINUOUS CUTTING MEANS TOP PRODUCTION

The metal cut-off band saw principle, in use on all Wells saws, provides maximum production and economical operation through CONTINUOUS CUTTING. EVERY TOOTH in the blade band does its SHARE OF CUTTING.

The new Wells catalog will give you complete details on all Wells Metal Cutting Band Saw Products. Write for FREE Copy.

WELLS NO. 8

Wells Saws
Wells

Products by Wells are Practical

METAL CUTTING BAND SAWS

WELLS MANUFACTURING CORPORATION
1313 HARDING ST., THREE RIVERS, MICHIGAN

▲ Mention Item NED-1898 when writing ▲

Behind the Scene of Action

The PALMER Thermometer works silently, without glamour, because it was built for long service, guaranteed accuracy and to be easy to read.

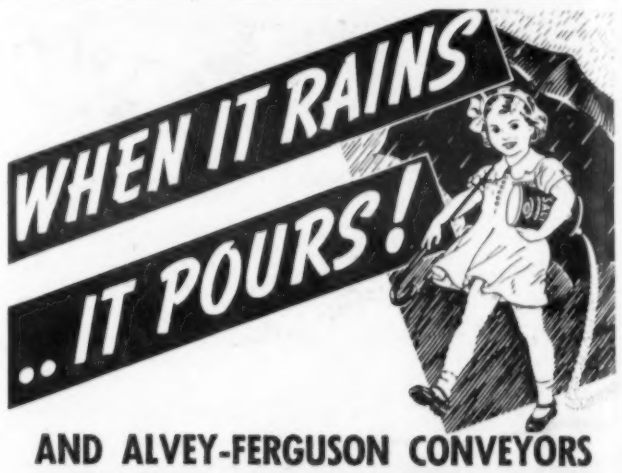
When battles are fought above deck, the engineers continue their scheduled tasks, obeying orders side by side with high powered Diesel Engines and the Thermometers and instruments upon which they rely.

When Victory comes again, give the Instruments and the Men equal credit for a job well done. In Peace Time, these same Thermometers will give you . . .

LONG LASTING SERVICE
GUARANTEED ACCURACY
RED-READING-MERCURY
(So Easy to Read)

THE PALMER COMPANY, Mfrs.
INDUSTRIAL, LABORATORY, DIAL & RECORDING THERMOMETERS
2523 Norwood Ave., Cincinnati, Norwood, O.
Canadian Plant: King & George Sts., Toronto

▲ Mention Item NED-1899 when writing ▲



AND ALVEY-FERGUSON CONVEYORS MAKE MORTON SALT *FLOW FASTER!*

"It would be practically impossible," writes the Morton Salt Company, "to use anything but conveyors for moving our product, and Alvey-Ferguson Conveyors serve this purpose perfectly!"

Permit Alvey-Ferguson Conveyor Engineers to solve *your postwar* product handling problems now. Write today! The Alvey-Ferguson Co., 33 Disney St., Cincinnati 9, Ohio. Offices in Principal Cities—Coast To Coast.

CONVEYING EQUIPMENT
Alvey-Ferguson
METAL PRODUCTS CLEANING & FINISHING EQUIPMENT

▲ Mention Item NED-1900 when writing ▲

30% MORE CIRCUIT CAPACITY
30% LOWER POWER BILL
with Pyranol Capacitors . . .

. . . that's the result at the Paxton-Mitchell foundry, Omaha, Nebraska, after Pyranol capacitors were installed. According to *Electrified Industry* (Sept., 1943):

"The power demand was 190 kva, and the wires couldn't carry the load properly. Power factor was only 70%, but when 90 kva of capacitors were installed, the same motors produced a demand of only 145 kva."

It became possible to connect more motors without using critical materials for extensive rewiring. Nor was it necessary to add to transformer capacity. The cost of the capacitors will be paid for in about 15 months by the saving in power cost.

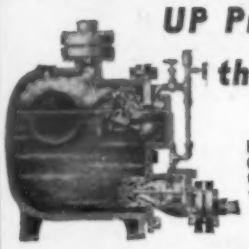
Maybe Pyranol capacitors can help you, too. Write for Bulletin GEA-77. *General Electric Company, Schenectady, N. Y.*

GENERAL ELECTRIC
407-72-5700

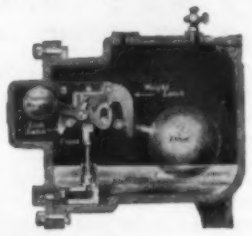
▲ Mention Item NED-1901 when writing ▲

NICHOLSON TRAPS

UP Production because they DOWN Trouble

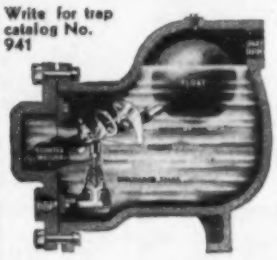


PISTON-OPERATED STEAM TRAP (left)—Extra-large capacity; for pressures to 650 lbs.; positive, instantaneous. Vital working parts of stainless steel.



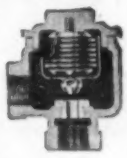
WEIGHT-OPERATED STEAM TRAP (right)—For pressures to 1500 lbs. at 1000-degree maximum temperature. Large capacity; positive automatic intermittent action. Fast acting valve. Water-sealed discharge.

Write for trap catalog No. 941



COMPRESSED AIR TRAP (left)—For pressures to 200 lbs.; intermittent, water-sealed discharge.

THERMOSTATIC TRAPS — Unit at right is one of five types for every industrial use.

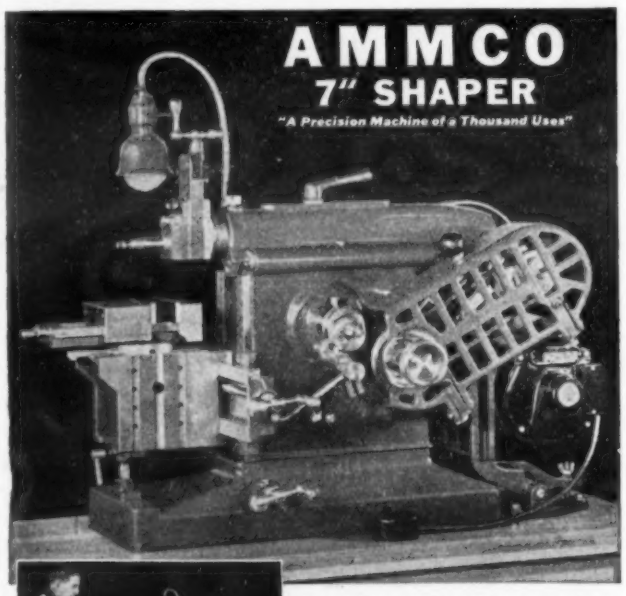


W. H. NICHOLSON & CO.

162 OREGON ST., WILKES-BARRE, PA.

Valves ★ Traps ★ Steam Specialties

▲ Mention Item NED-1902 when writing ▲



IT'S PORTABLE

--Saves Steps and Time--

Don't tie up a big shaper when so many jobs can be done just as accurately and much quicker and more economically on the AMMCO 7" PRECISION SHAPER.

Available for stationary installation or mounted on portable cabinet easily rolled to the mechanic's workbench ... Write today for specifications and prices.

AUTOMOTIVE MAINTENANCE MACHINERY CO.

2110 Commonwealth Avenue North Chicago, Ill.

▲ Mention Item NED-1903 when writing ▲

CLEVELAND FASTENERS

The Cleveland Cap Screw Company

2917 EAST 79TH STREET • CLEVELAND 4, OHIO

Warehouses: Chicago, Philadelphia, New York, Los Angeles

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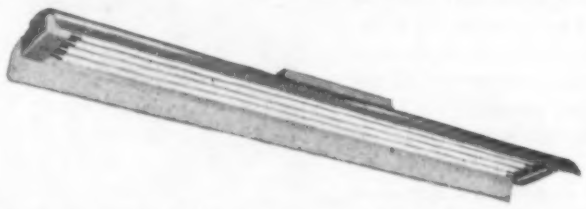
COLD CATHODE LIGHTING

Similar in appearance and general lighting qualities to conventional F type fluorescent lamps, except that they are 7 feet 9 inches long and 1 inch in diameter, Kold-Hold cold cathode



lighting units are available for general industrial lighting. Advantages offered include instantaneous starting without flicker at instant switch is thrown, elimination of starters and extension of lamp life to 10,000 hours or four times that of type F lamps. Tubes will start and operate at low room temperatures and they are not sensitive to line voltage variations. They operate on standard 110-125 volt alternating current systems. Surface brightness or glare is reduced 25 per cent below that of conventional lamps.

Single fixture uses four Colovolt cold cathode low voltage tubes and delivers 8800 lumens of light. It may be surface or suspension mounted, individually or in continuous rows. Mounting brackets and knock-outs are provided. Unit has heavy gage steel wireway channel with two Duo ballasts on top, exposed for greater air circulation. Reflector is non-metallic, having chip-proof white enamel reflective surface. Lamps are easily installed and disconnect switch automatically cuts off current for lamp replacement. Made by **Mitchell Mfg. Co.**, Dept. N-2, 2525 N. Clybourn Ave., Chicago 14, Ill.

▲ Mention Item NED-1905 when writing ▲

THREAD GRINDER

Electronically controlled by a General Electric Thy-motrol drive, this thread grinder is claimed to afford maximum production of threaded parts, thread gages, straight and spiral fluted taps, and thread milling cutters. Advantages include complete control of work quality, ease of operation and speed of uniform production. Speeds of work and grinding wheel are individually controlled by dial settings. This variation is stepless and ratio of speeds is infinite in both forward and reverse. Motor elevation of head permits rapid clearing of work and design of machine allows full work vision at all times. Two types of automatic wheel dressing attachments are available.

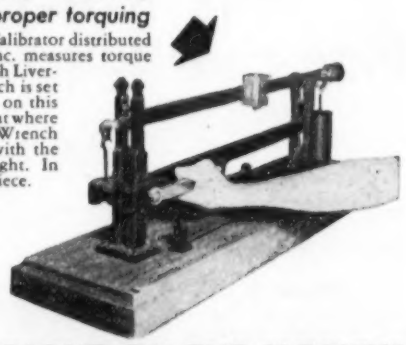
No. 5 machine handles wide variety of work up to 9¾-inch length of thread at any location on 20-inch shaft. Cutter relief may be ground up to 0.025 inch per ⅛-inch length of land. Cutters with as many as 24 flutes may be relieved. No. 6 machine without back-off feature handles work up to full 20-inch length of thread on 20-inch shaft. Made by **Dalzen Tool & Mfg. Co.**, 12255 E. Eight Mile Rd., Detroit 5, Mich.

▲ Mention Item NED-1906 when writing ▲

RIGHT ON THE MONEY

here's proof of proper torquing

the Chapman Torque Calibrator distributed by Tubing Seal-Cap Inc. measures torque within *1 inch-ounce*. Each Livermont Torq-Stop Wrench is set and tested for accuracy on this precision scale to a point where the beam balances. Wrench must not break beam with the addition of small weight. In this case a five cent piece.

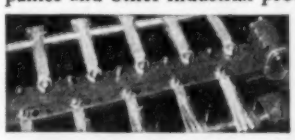


TORQUING "RIGHT ON THE MONEY"

with the world's easiest-to-use torque wrench—a recommended S.A.E. standard

Now nuts, bolts, clamps and fittings can be tightened to their safe, proper torque "right on the money" by unskilled help.

The accurate, sturdy, compact Livermont Torq-Stop Wrench is a production line tool that increases output, assures correct torquing. No dials, no batteries—nothing to watch. Gives an audible "click" and a definite physical sensation is transferred to operator's palm when proper torque is reached. Used by aircraft companies and other industrial production plants. S.A.E. dimensions.



10,000 OPERATIONS BEFORE FINAL APPROVAL. This is the Livermont Torq-Stop Break-In Table. Each Wrench after being set to its proper torque is operated through 10,000 consecutive cycles.

Send today for 36 page illustrated Aircraft Tubing Manual.

Tools Are Weapons—Treat 'Em Right.

LIVERMONT *torq-stop* WRENCH

Sold by TUBING SEAL-CAP INCORPORATED

215 West Seventh Street Los Angeles, 14, California

Eastern Representative: 428 New Center Building, Detroit, Michigan

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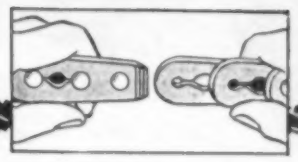
BROWNING Griplink BELT



★ Made from specially developed materials.

★ Easily adjustable, and quickly replaceable.

★ No machinery tear down or prolonged idleness.

★ Available from stock in all "V" Belt cross sections.

★ Write for completely detailed bulletin, V-161.

Browning Manufacturing Company, Incorporated

MAYSVILLE, KENTUCKY

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"Take it away" with

CM HERC-ALLOY SLING CHAIN

Every Inswell electric-welded link in this CM Herc-Alloy steel sling chain personifies safety and lifting strength. From the white hot ingots in the nation's steel mills to the finished structural girders for our skyscrapers, CM Herc-Alloy Sling Chains have been doing a handling job that ranks them "tops" in industry..."tops" in dollar value, service life, maximum safety or any other yardstick of measuring.

Ask your mill supply distributor about the particular CM Herc-Alloy Sling Chain for your job and learn first hand the reasons why the top names in American industry have been using them for years.

COLUMBUS-McKINNON CHAIN CORP.

Affiliated with Chisholm-Moore Hoist Corp.

General Offices and Factories: 114 Fremont Avenue, Tonawanda, N. Y.

Sales Offices: New York, Chicago and Cleveland

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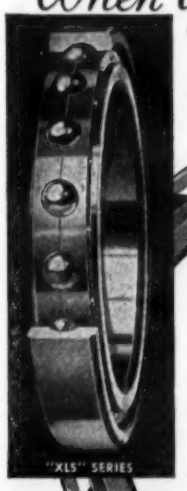
When You're Cramped for Space

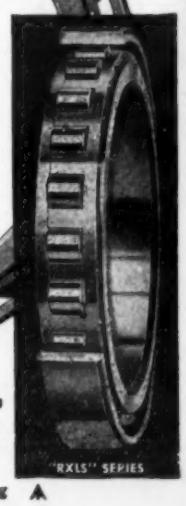
USE THESE VERY LIGHT INCH SERIES BEARINGS



HAVING bores abnormally large, as compared with the outside diameter, they offer the engineer such important advantages as *compactness, light weight and greater latitude in design.*

They are available in ball bearing sizes from ⅛" to 21" bore, and in roller bearing sizes from 1½" to 21" bore.

Write for the Catalog. Let our engineers work with you.



"NORMA-HOFFMANN"

PRECISION BALL, ROLLER AND THRUST BEARINGS

▲ Mention Item NED-1910 when writing ▲

Why take CHANCES ?

. . . and don't take chances with dust hazards either! Thousands of workers in industry everywhere have found the best defense against dust is DUPOR Respirators. The one pictured here is . . .

DUPOR No. 1

A miniature nose mask that weighs only 1 ounce. It's as handy as a pair of glasses. Unique filter pad provides 9 sq. in. filter area. It's ideal for use where nuisance dusts are slowing production. Sample sent for $1.00 postpaid. Or, write for Catalog, now!

GOLDEN JUBILEE 1894 1944 H. S. COVER

Chippewa Street South Bend, Indiana

▲ Mention Item NED-1911 when writing ▲

Save MAN-POWER AND MONEY in Handling Drums, Barrels

Up to 800 lb. drum or barrel loads are easily and smoothly picked up and transferred — by ONE MAN—when he uses a Sabin One-Man Truck. No helpers needed.

Exclusive Third - Wheel feature provides foot pedal for easy "break-over", insures better load support and balance, and permits loaded truck to stand alone.

Send for FREE Bulletin

SABIN One-Man TRUCK

* Illustration shows Sabin Type L-3. Bulletin also shows many other types of Sabin One-Man Trucks

THE SABIN MACHINE COMPANY
6536 CARNEGIE AVE., CLEVELAND, OHIO

▲ Mention Item NED-1912 when writing ▲

When "Elmer" takes over

A SPECIAL FRACTIONAL HP MOTOR GOES TO WORK

Just as a bomber goes into the final bombing run, "Elmer", the automatic pilot, takes over the big ship and guides it straight and steady right on the target.

It's when "Elmer" takes over the controls that a special motor goes to work . . . driving "Elmer's" intricate mechanisms at a constant, dependable speed which assures precision, pin-point bombing from all altitudes at all temperatures. Providing power for automatic pilots is but one of the many applications for which Holtzer-Cabot specially designed fractional HP motors are used.

Special Motors Designed to Fit the Application

Today, the full capacity of Holtzer-Cabot facilities are being used in building fractional HP motors for military use. However, our motor development engineers are available for solving special fractional HP motor problems for contemplated peace-time products.

THE HOLTZER-CABOT ELECTRIC COMPANY
125 Amory Street, Boston 19, Massachusetts
CHICAGO, ILL. NEW YORK, N. Y. PHILADELPHIA, PA.

▲ Mention Item NED-1913 when writing ▲

PNEUMATIC MOTOR

Applicable particularly where explosive or inflammable gases are present as well as in processing materials which require extreme caution, compressed air operated airmotors are available in wide range of speeds and horsepowers. Air consumption may vary from 1 cubic foot per minute up. Pressure may range from 10 to 100 pounds per square inch and horsepower from 0.03 to practically any limit. Operating speed may be from 50 to 1800 revolutions per minute.

Motors are reversible by means of three-way valve. Illustrated unit is attached to propeller for mixing purposes. Made by Leiman Bros., 133-28 Christie St., Newark 5, N. J.

▲ Mention Item NED-1914 when writing ▲

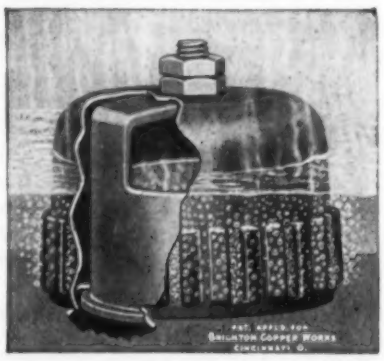
PLASTICIZER

Successfully replacing critical materials used for plasticizing cellulose acetate, PHO may be substituted for up to 50 per cent of such materials as triacetin and phthalic and phosphoric esters. This viscous, resinous liquid produces somewhat higher total plasticizing oil content than when ordinary materials are used. Compositions are being used as injection molding compounds for small industrial molded pieces, insulation parts and for consumer articles such as pens, pencils and combs.

Use of this plasticizer is claimed to reduce water permeability in cellulose acetate compounds. Cellulose acetate, when highly plasticized with this material with or without usual plasticizers, yields tough rubbery solids which may be calendered into sheets or used as thermo plastic adhesives. Backing for felt and gasket material is one of the many uses of such solids. Made by The Neville Co., 1900 Neville Island P. O., Pittsburgh 25, Pa.

▲ Mention Item NED-1915 when writing ▲

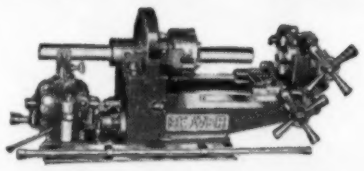
PROCESSING BUBBLE CAP



Available in either stainless steel or copper, this Louvre bubble cap is designed for use on fractionating columns. Louvres are designed to force larger bubbles to collide and afford same action as previously used cast bubble caps. Being of pressed metal these caps afford uniformity and maximum operating efficiency. They are pressed from 14-gage material and standard size is 3-inch diameter. However, they may be furnished in any required size. Made by The Brighton Copper Works, Brighton Station, Cincinnati 14, Ohio.

▲ Mention Item NED-1916 when writing ▲

The A-B-C of Pipe and Bolt Machines!

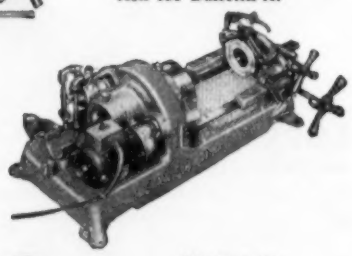


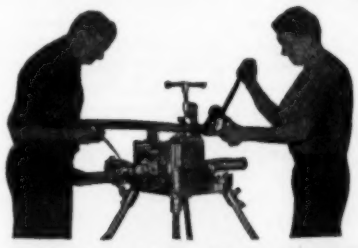
Model-A

A high-speed heavy-duty deluxe Pipe and Bolt Machine. Range ½ to 2-inch —up to 12-inch with geared tools and drive shafts. Bolts, ¼ to 2-inch. Wt. 415 lbs. Ask for Bulletin-A.

Model-B

A compact utility Pipe and Bolt Machine combining many features of Model-A with the easy portability of Model-C. Range ½ to 2-inch — up to 8-inch with drive shaft and geared tools. Bolts up to 1½-inch. Weight 280 lbs. Ask for Bulletin-B.





Model-C

A sturdy little Power Unit

Converts Hand Pipe Tools into Power Tools from ½ to 8 inches. Threads 8 inch in 6 minutes. Threads bolts up to 1½-inch. Equipped with automatic chuck wrench ejector—a safety feature. Two men can use it at the same time without interference. Easily portable—weighs about 150 lbs. Write for Bulletin-C.

BEAVER PIPE TOOLS
Highest Quality • WARREN, OHIO • For 40 Years

444 HENRY AVE. WARREN, OHIO

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A TESTED WAY TO . . .

- Reduce factory errors
- Speed production
- Save precious man-hours

Blurred, grimy blueprints, factory cards, work orders waste precious man-hours. They cause questions and doubts about instructions. They cause errors in production and "make-overs" on jobs using critical war materials. Keep your work orders clean and clear by inserting them in KLEER-VU Plastic Envelopes. Then greasy factory fingers can't mar your records. Bound leatherette edges prevent tearing. Patented lock-stitch won't unravel. Flame-proof, moisture-proof, soil-proof.

Special problem can be solved with Special KLEER-VU Envelopes in ANY STYLE, ANY SIZE, ANY GAGE. Write to Dept. NED.

Send today for your FREE sample Kleer-Vu Envelope and put it to the Test !!

American Plastic Products
553 SOUTH WESTERN AVENUE
LOS ANGELES 5, CALIFORNIA
NEW YORK OFFICE: 476 Broome Street

New Type Deskvelope Now Available→

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This new Wetmore catalog No. 44 is packed with information—it covers all the details you'll want on reamers, boring bars and special tools. It has very useful engineering data and tables that you should have for handy reference.

There is a copy waiting for you—ask for it. Give us your name, title and company. Free, without obligation of course.

WETMORE REAMER COMPANY
418 North 27th Street Dept. N Milwaukee 8, Wisconsin

REAMERS AND WETMORE BORING BARS

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DESIGNED FOR YOUR JOB

Have you considered Carbon Seal Rings? Does your application demand low friction, long wearing and non-abrasive qualities? We have developed special carbons to meet varying conditions of pressure, temperature, speed, and character of material to be sealed. Our engineers are available for consultation on your sealing problems. Bulletin sent on request.

PURE CARBON COMPANY, Inc.
2130 Nobrac Street Saint Marys, Pa.

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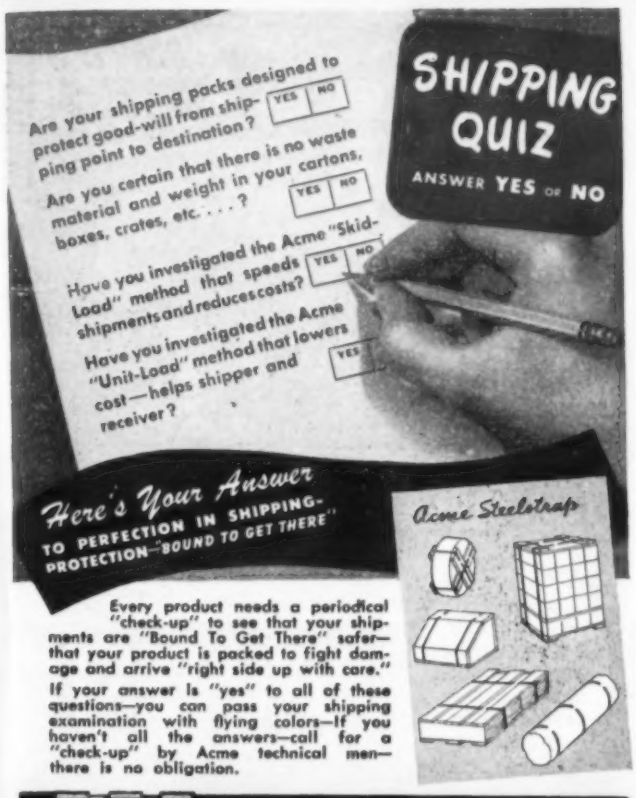


Every product needs a periodical "check-up" to see that your shipments are "Bound To Get There" safer—that your product is packed to fight damage and arrive "right side up with care."

If your answer is "yes" to all of these questions—you can pass your shipping examination with flying colors—If you haven't all the answers—call for a "check-up" by Acme technical men—there is no obligation.

ACME STEEL CO. CHICAGO

ACME STEEL COMPANY
2822 ARCHER AVENUE, CHICAGO, ILLINOIS

Branches and Sales offices in Principal Cities

▲ Mention Item NED-1921 when writing ▲

A GENERAL WIREBOUND BOX IS "PART OF THE PRODUCT"

THE two generators above are securely blocked in a General Wirebound container which is "part of the product" until it reaches the user. In addition to providing protection, General Box Company engineers specified a chemically-treated jacket and wax-dipped blocks so that the jacket and blocks would not cause moisture and develop rust on the generators. Another example of how General Box Company can solve shipping problems for you tomorrow.

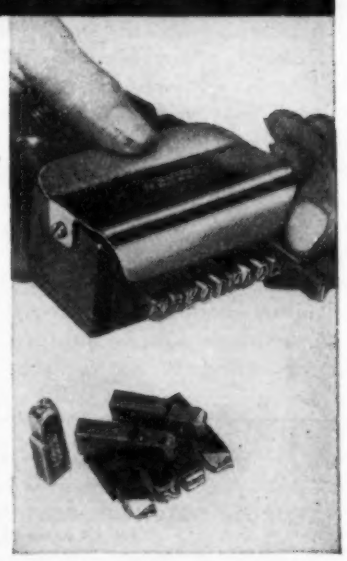
General BOX COMPANY

General Offices: Corner of Dearborn and Illinois Streets, Chicago, Illinois. District Offices and Plants: Brooklyn, Cincinnati, Detroit, E. St. Louis, Kansas City, Louisville, Milwaukee, New Orleans, Sheboygan, Winchendon. Continental Box Company, Inc.: Houston, Dallas.

▲ Mention Item NED-1922 when writing ▲

QUICKER... EASIER... CLEANER
GANG STAMPING

THUMB PRESSURE CLIP PERMITS QUICK CHANGING OF TYPE



This HERCULES HOLDER marks tool steel, castings, half hard brass, stainless and Monel Metal. A blow with a heavy hammer and the mark is made. Type, available for any number, or letter combination, is especially designed with extra body for added strength under continuous impact. All sizes of this ACROMARK product are available. When ordering, give size and maximum number of characters needed for single stamping. Literature on request.

ACROMARK
THE ACROMARK COMPANY
7 MORRELL ST., ELIZABETH, NEW JERSEY

▲ Mention Item NED-1923 when writing ▲

PROCESSING TIMER

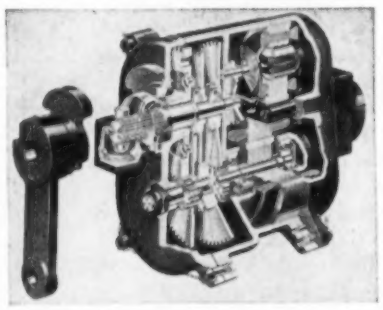
Of two-dial rotary type, this process timer is adaptable for regulating flow of products in catalytic processes such as production of hi-octane gasoline, butadiene for synthetic rubber and toluene for explosives. Manufacture of these products requires hundreds of accurately timed sequential operations. All requirements are met by this timer in which each of two dials has two concentric rings or rows of 224 contact points each, a total of 896. Each dial has rotating contact arm which is geared to single shaft and may be driven through clutch by synchronous motor and adjustable gear train. Arms can also be operated independently from separate motors. Spare motors and hand wheel for manual operation are also available.

Circuit to segments is made and broken through auxiliary switch and unit will handle control circuits ranging up to 10 amperes at 125 volts. This control may be operated at any selected speed to suit requirements of process. It is arranged to complete circuit to control device or an alarm circuit as a moving brush selects each point. Flexible jumpers are plugged to segment to provide desired operating cycle and all incoming control leads are brought to terminal board.

Equipment is enclosed in compact steel housing having window for viewing timer segments and operating arm. It is easily adaptable to control many chemical and industrial processes now operated mechanically. Made by General Electric Co., Switchgear Div., Schenectady, N. Y.

▲ Mention Item NED-1924 when writing ▲

AIRCRAFT CONTROL SYSTEMS



Providing positive straight line or rotary motion with or against opposition, this series of aircraft Servo motors is used in conjunction with autosyn transmitters and amplifiers for such applications as remote automatic and coordinated control of aircraft main engines, elevator, rudder and aileron control surfaces. Accurate and positive remote adjustments of exacting flight functions are obtainable.

Motors have been designed to provide straightline motion, rotary motion or continuous rotary motion. No complicated switching, special relays, potentiometers or motor brushes are used. Current consumption is said to be comparatively negligible. Illustrated unit provides accurate control of aircraft main engine. It is rated at 45 inch-pounds torque, with output shaft speed of 5 revolutions per minute, arm travel of 90 degrees, power input of 15 watts continuous and 30 watts under load. It operates on 400 cycle alternating current. Weight is 2¼ pounds. Made by Eclipse-Pioneer Div., Bendix Aviation Corp., 1943 Williams Ave., Teterboro, N. J.

▲ Mention Item NED-1925 when writing ▲

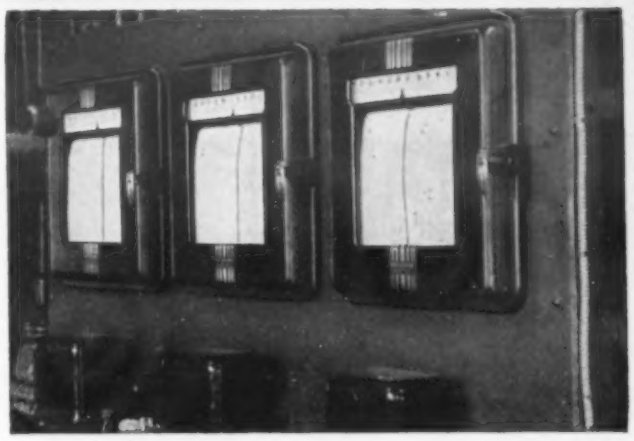
Abrasive RESINOID BONDED
DIAMOND WHEELS

Need diamond wheels in a hurry? Call on ABRASIVE for IMMEDIATE DELIVERY . . . faster cutting and better finishes on carbide tools. ABRASIVE offers three generations of diamond experience combined with modern research and testing facilities. ABRASIVE engineers recommend correct wheel for each job.
WRITE FOR NEWEST CATALOG.

ABRASIVE DIAMOND DRESSING TOOL CO. WHEEL DIVISION
DETROIT, MICHIGAN
THIRD GENERATION OF DIAMOND EXPERIENCE

DISTRIBUTOR TERRITORIES OPEN. *Phone, wire or write for details!*

▲ Mention Item NED-1926 when writing ▲



FOR HELP IN WATER CONDITIONING
Micromax Solves the pH Recording Problem

Efficiency of water-treatment in the Arkwright Corp.'s Finishing Division at Fall River, Mass., has been considerably improved because of the complete, accurate and prompt pH information which the filter-plant operators get from the three Micromax pH Recorders shown above . . . These are Strip-Chart Signalling Recorders; fully automatic; alarm-operating. For further information, kindly outline your problem.

LEEDS & NORTHRUP COMPANY, 4985 STENTON AVE., PHILA., PA.
LEEDS & NORTHRUP
MEASURING INSTRUMENTS · TELEMETERS · AUTOMATIC CONTROLS · HEAT-TREATING FURNACES
Jrl Ad N-96-701(2a)

▲ Mention Item NED-1927 when writing ▲

Water Put Out This Oil Fire
. . . WATER IN
WaterFOG
FORM!

FIRE! FOG!

FOOSH! OUT!

FROM FIRE TO OUT IN 2 SECONDS!

Plain ordinary water *can* be used to fight dangerous flammable liquid fires successfully. WaterFOG works where a solid stream of water or even spray is ineffective. Why? The answer is basic physics—speed of heat absorption increases with surface area exposed to heat.

By transforming impinging streams of water into minute fog particles, Rockwood WaterFOG nozzles greatly expand the total surface area of a given volume of water. These particles completely envelop the combustion area—quenching the flames, then cooling the oil surface, retarding vaporizaion. Finally the foglets expand into steam, shutting off oxygen.

Thus WaterFOG destroys what it takes to make fire: heat, vapor, oxygen. And unlike solid water or spray, WaterFOG floats gently into the combustion area—doesn't plunge into the liquid to accelerate vaporization.

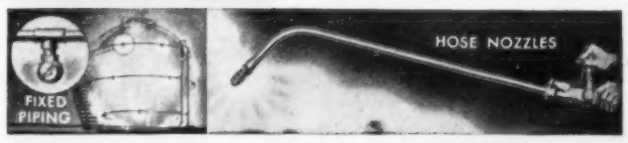
Rockwood installations are approved by Underwriters' Laboratories and Associated Factory Mutuals. Fixed piping installations and hose nozzles. Write for free Bulletin 123.

ROCKWOOD SPRINKLER CO., 44 Harlow St., Worcester 5, Mass.

Specialists in Fire Protection Engineering, Equipment and Installation since 1907

ROCKWOOD WaterFOG

Water Engineered by Rockwood Cools. Confines. Smothers Oil Fires



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FOR

HALLOWELL

WORK BENCHES OF STEEL

Without fuss or bother you can choose from over 1300 ready-made interchangeable steel work-bench combinations. Rigidly constructed—no bolting to floor required. Deliveries better than average. Duration Type "Hallowell" Work-Benches of wood available for use where steel is war-restricted.

Fig. 732. Pat'd. & Pats. Pend. Drawer is extra.

WOOD STOOLS

Wartime products of the makers of famous "Hallowell" Steel Stools. Made in five sizes, with and without backrests.

Fig. 1926. Pat'd. Pend.

Over 40 Years in Business

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA., BOX 581

Branches:

Boston • Detroit • Indianapolis • Chicago • St. Louis • San Francisco

Write for fully illustrated "Hallowell" bulletins

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New Slide Rules IN PRODUCTION

3 Types • 3 Prices • Immediate Delivery

SIMPLE INSTRUCTION MANUALS INCLUDED

Made for the emergency—they'll do the job—and you can get 'em right now. Post Slide Rules come in leatherette cases and are accompanied by comprehensible instruction manuals. Read the descriptions below and reach for the phone for fast-action delivery.

Ten inch Celluloid Face bevel edge slide rule. Inches and metric rules on bevel edges. Scales A, B, C1, C, D and K on slide front. Scales S, L and T on reverse side.
Attractive leatherette case . . . . . 1452D List Price $3.50

Five inch Celluloid Face POCKET style slide rule. Scales A, B, C1, C, D and K on slide front. Scales S, L and T on reverse. Leatherette Pocket case . . . . . 1444D List Price $2.25

Ten Inch Printed Surface slide rule. Inches and metric rules on vertical sides. Scales A, B, C1, C, D and K on slide front. Scales S, L and T on reverse side. . . . . 1446D List Price $1.50

POST DETROIT

The Frederick Post Company

561 E. JEFFERSON AVE. RANDOLPH 8483

▲ Mention Item NED-1930 when writing ▲

There are over

SIXTY THOUSAND

SPERRY EXACTOR REMOTE CONTROLS in use!

The Sperry EXACTOR Hydraulic Remote Control is a simple, unique, single-tube system designed to control mechanisms over distances up to 200 feet. The more than 60,000 EXACTORS in operation today, solving the remote control requirements of design engineers in many fields, are proof of the thorough engineering and trouble-free design incorporated in this system.

Positive control, through a single tube

It is accurate to a fraction of a degree and entirely self-contained, reproducing applied motion without the aid of an auxiliary source of power. It presents no installation problem, because both the Transmitter and Receiver are compact and light in weight, and the tube which connects them can be bent around obstacles easily. Vibration does not interfere with its positive, reliable action and means is provided for periodic temperature compensation.

If you have a remote control problem — in the railroad, marine, automotive, aviation, or any of the industrial fields — you will want our completely descriptive booklet. Send for it today.

The Sperry EXACTOR HYDRAULIC REMOTE CONTROL is rated at 400 inch-pounds in one direction, through 55° of motion, and 125 inch-pounds on the return.

FILL OUT AND MAIL COUPON BELOW • NO OBLIGATION

SPERRY PRODUCTS, INC.
HOBOKEN • NEW JERSEY

Gentlemen: Please send me, at no cost, a copy of your Bulletin 70-D containing complete details on your EXACTOR HYDRAULIC REMOTE CONTROL.

NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ STATE _____

N.E.D. EHC-444

▲ Mention Item NED-1931 when writing ▲

CIRCULAR DIES

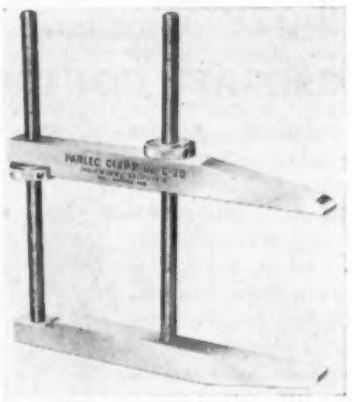
Considerable savings in tooling time and cost in producing certain types of dies can be effected through use of tool steel tubing. Typical example of type of die which can be made by this method is shown. It is made of four different sizes of tool steel tubing. In portion shown at left, outside section of tubing is blanking ring, middle section is pressure pad and inner section is draw stake. In portion of die shown at left, one section of tubing is used to make blanking and drawing ring.

Sizes of tube used in this die range from 14 to 10-inch outside diameter. Die is used to blank and form small heater tops from 20-inch gage cold rolled sheet in single operation. Usual method of constructing die of this type would have been to use forged rings, machined to size. In smaller dies, particularly with deeper draw, usual practice would be to bore solid bars.

Tool steel tubing may be substituted for bored bars in manufacture of blanking and forming dies, pumps, collets, collet closers, spindle thrust collars, rim rolls, hardened master tools, ring gages, bushings, slitters, spacers, machine tool parts and many other tools and parts. Tool steel tubing is made in wide range of diameters and lengths by **The Bissett Steel Co.**, 945 East Sixty-seventh St., Cleveland, Ohio.

▲ Mention Item NED-1932 when writing ▲

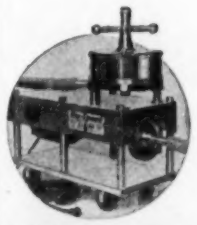
CLAMP

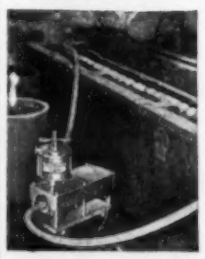


Designed for holding small work together for tapping and drilling, Parlec clamp consists of two case hardened steel jaws, two case hardened steel adjustment nuts and two heat treated steel studs. Studs are solidly fastened into lower jaw of clamp and one of adjustment nuts is screwed on rear stud. Then upper jaw is slid into place on studs and other adjustment nut screwed into place on front stud. Thus top jaw is movably controlled by two adjustment nuts, the front nut acting as pivot and rear exerting gripping pressure. Both nuts have pin holes for quick, easy hand adjustments. Quick turn of rear nut releases pressure instantly. As adjustment nuts are close to clamping jaws, tightening torque is more positive than on conventional designs. Jaws are tapered on ends to allow clamping under shoulder or recess. As lower jaw has no obstructions this permits clamp to fit closer to part held. When drilling of part is necessary, clamp may be used as base.

Clamps are available in two sizes. Model No. C-15 opens to 5¼ inches with jaw length of 6¼ inches. Model No. C-20 opens to 6½ inches with jaw length of 7¾ inches. Other sizes may be had on special order. Made by **Earl C. Parkhurst**, 751 Stepney Place, Inglewood, Calif.

▲ Mention Item NED-1933 when writing ▲





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"SEALED DISC" and "DISC-PAK" FILTERS

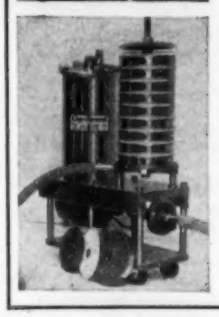
for all Liquids and Oils

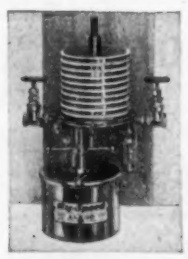
Will completely filter out all dirt, rust, sediments and impurities. High clarification at low cost. All types and sizes. Portable, stand and for pipe line connection.

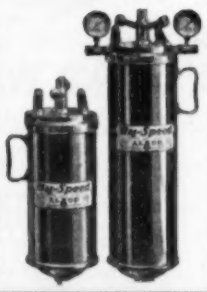
The complete story of liquid filtration, yours for the asking. Write today for your copy

ALSOP ENGINEERING CORP.

34 Main Street • Milldale, Conn.







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DURO TEST CORPORATION

NORTH BERGEN • NEW JERSEY

INCANDESCENT FLUORESCENT ELECTRONIC

Write for complete catalog #43 D or ask for local representative to call

▲ Mention Item NED-1935 when writing ▲

How Design of Needle Bearings Aids Efficient Lubrication!

TYPE DC

The turned-in lips of the hardened retaining shell on the DC Type Torrington Needle Bearing provide a natural reservoir for storage of the lubricant—within the bearing itself!

TYPE NCS

The heavier outer race of the NCS Type Needle Bearing also illustrates this design advantage which is an outstanding feature of Torrington Needle Bearings.

This Feature Promotes Design Simplification; Prolongs Service Life; Reduces Maintenance

An outstanding feature of Torrington Needle Bearings is the ease and efficiency with which they are lubricated . . . a factor contributing to many advantages which the design engineer will quickly appreciate.

For example, the design of the Torrington Needle Bearings illustrated here—with the cupped or closed retaining shells holding the full complement of needle rollers—provides a natural reservoir for storage of lubricant. Thus as the rollers rotate they are continually supplied with an oil or grease film.

So efficient is this simple method of lubrication that many applications have been made in which the lubricant provided in the bearing on installation lasts for the life of the equipment.

However, in any given layout or application, the design and service requirements will determine the method of lubrication as well as the type of lubricant.

From long experience with hundreds of different applications, Torrington's Engineering Department will gladly advise on selecting the method best suited to the requirements of your use of Needle Bearings. In this way you are assured long life and an installation which will require a minimum of maintenance or service attention.

Further information on this and other advantages of these compact, high capacity anti-friction bearings will be found in our Catalog *106*. Send for your copy today.

THE TORRINGTON COMPANY

TORRINGTON, CONN.

THE TORRINGTON CO., BANTAM BEARINGS DIVISION

SOUTH BEND 21, IND.

"Makers of Needle Bearings and Needle Bearing Rollers"

New York Boston Philadelphia Detroit
Cleveland Seattle Chicago San Francisco
Los Angeles Toronto London, England

TORRINGTON NEEDLE BEARINGS

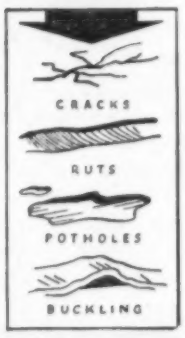
▲ Mention Item NED-1936 when writing ▲

FASTEST Production Travels On

KLEMP HEXTEEL

Heavy Duty Surface Armor

Insures against such handicaps as these:



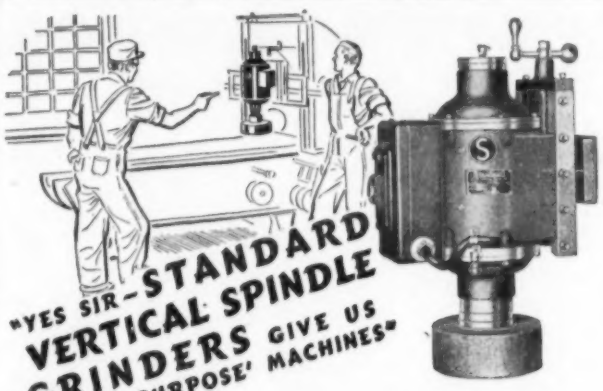
And all other floor troubles. Safest most economical floor protection. Steel mesh imbedded in concrete or mastic over old or new concrete or wood floors. *Also repairs old floors.* Exposed top of steel mesh carries the loads.

SEND FOR COMPLETE CATALOG

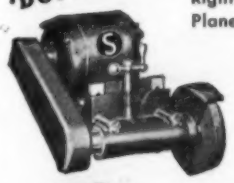
Hexteel, Floorsteel, Gratings, Stair Treads, Safety Mats. Write

WM. F. KLEMP COMPANY
"Steel Flooring Specialists"
6607 S. Melvina Ave. Chicago 38, Illinois

▲ Mention Item NED-1937 when writing ▲

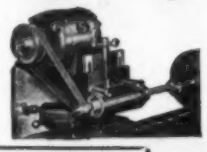


"YES SIR—STANDARD VERTICAL SPINDLE GRINDERS GIVE US 'DOUBLE PURPOSE' MACHINES"



Right—it can be easily mounted on your Planers, Boring Mills, Shapers, Milling Machines, etc. Adaptable for Wet or Dry Grinding.

PRECISION INTERNAL-EXTERNAL ¶GRINDERS



For use on Lathe, Shaper, Planer, Boring Mill, etc.

A 2 in 1 Tool—You can grind externally, and in a few minutes mount an inter-changeable Quill for internal grinding up to 24" deep.

Write for Catalog 43 illustrating a wide range of Grinding Equipment up to 30" wheels. Buffing and Polishing Machines up to 25 H.P., and Speed Lathes.

The STANDARD ELECTRICAL TOOL Co.
CINCINNATI • OHIO
2488 RIVER ROAD
CINCINNATI 4, OHIO

▲ Mention Item NED-1938 when writing ▲

★

SAVE TIME, METAL, MONEY & LABOR WITH MEYERCORD

DECALCOMANIA NAMEPLATES

Meyercord Decal nameplates, instructions, insignia, etc., are widely used on tanks, combat and merchant ships, planes and communication equipment. Any size or design can be produced in durable, washable colors. No screws, bolts or rivets required. Meyercord Decals are easily applied to flat, convex or concave surfaces . . . for interior or exterior use . . . on metal, wood, fabric, rubber . . . even CRINKLED FINISHES! Free designing and technical service. For literature address Department 13-4.

THE MEYERCORD CO.
World's Leading Decalcomania Manufacturer
5323 West Lake Street
Chicago 44, Illinois

▲ Mention Item NED-1939 when writing ▲

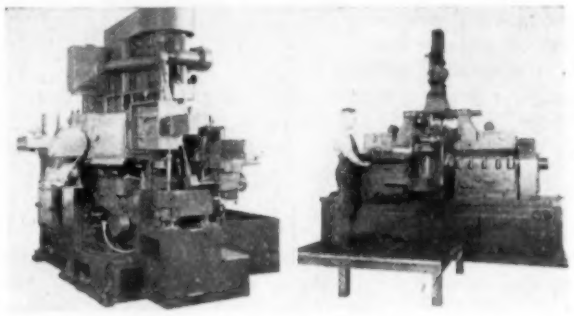
BONDED DIAMOND WHEELS

All popular sizes and most widely used types are included in this line of Abrasive resinoid bonded diamond wheels. They are designed particularly for fast cutting of carbides, producing uniform cutting edges on carbide tipped tools, removal of excess metal on carbide dies and for radius grinding of mounted carbide tips. In addition to straight, pointed and rounded types with diamonds in periphery, there are plain cup, flaring cup and dish types with straight or bevel insides. Hand lapping hones with diamonds at either or both ends are available. Made by **Abrasive Dressing Tool Co.**, 1552 Broadway, Detroit, Mich.

▲ Mention Item NED-1940 when writing ▲

PARALLEL SURFACE GRINDER

Small parts which require accurate grinding of parallel surfaces, such as washers, oil seals, sides of bearing races and piston rings, can be ground at high speeds with these grinders



No. 253, shown at right, and No. 926, shown at left. Both machines are wet grinding types, thus practically eliminating warpage. In addition to maximum hourly production, rejects are held to minimum.

Typical example of use of these machines is on grinding piston rings. Grinders are operated as battery. No. 253 double spindle horizontal machine with automatic feed does rough and semi-finished grinding at rate of 12,000 pieces per hour. No. 926 double vertical spindle grinder is used for finishing rings to tolerance of 0.0002 inch at rate of 8500 pieces per hour.

Wide range of work may be ground with No. 253 machine when equipped with various types of fixtures such as semi-automatic roll feed, semi-automatic rotary fixtures with multiple station solid or segmental feed wheels, power oscillating fixture, hydraulic reciprocating planer type table or special work-holding fixtures. Machine is equipped with vertical bar type wheel dresser, power driven and having automatic reversing switches and push button control, with dresser bar to accommodate diamond or star cutters.

No. 926 machine is designed for precision finishing of parts having parallel surfaces. Wheel dressers furnished are power driven, push button controlled and have adjustable diamond holders. Work feeding mechanism is of semi-automatic magazine type with quick change endless feed chains. Multiple station rotary feed wheels mounted on vertical spindle can be supplied. Made by **Charles H. Besly & Co.**, Engineering Dept. 1, 118 N. Clinton St., Chicago, Ill.

▲ Mention Item NED-1941 when writing ▲

Not all synthetic gloves are oil resistant!

Hands in Danger are Safe in Stanzoils

Safety is cheapest — keep your busy factory "hands" safely at work, avoid lost production, costly injury claims. Stanzoils, the popular neoprene glove resists damage by oils, acids, caustics, last 3 to 7 times longer than rubber. Prevent skin irritation — workers like them. Standard styles, black, white. Write for current delivery data.

STANZOIL PIONEER

Synthetic Rubber Division
THE PIONEER RUBBER COMPANY
248 Tiffin Rd., Willard, Ohio, U.S.A.
New York · Los Angeles

MADE WITH DU PONT NEOPRENE

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REMOVE SCALE, PAINT, RUST
Quickly . . . Easily . . . Use

AURAND

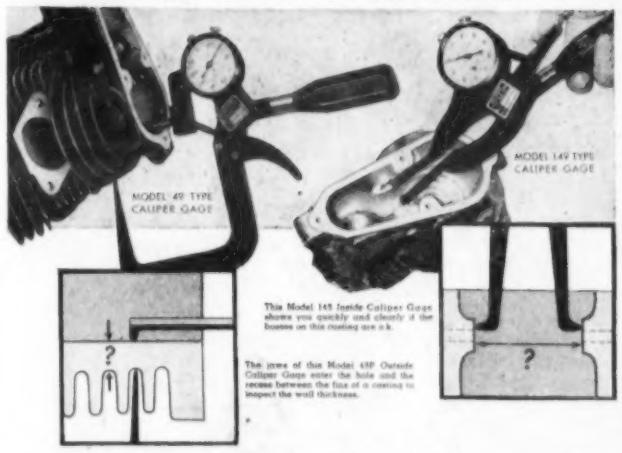
CLEANING TOOLS

It's easy to remove paint, scale, rust and other accumulation with AURAND Cleaning Tools. Powered, rotary chipping does a thorough cleaning job in less time. No special skill required. Even depth surface is assured by an adjustable shoe control. Cutter heads are renewable.

For Further Information Address Dept. 14

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

▲ Mention Item NED-1943 when writing ▲



The Easiest Way to Inspect
OUTSIDE *and* INSIDE
DIMENSIONS - - - - -

The jaws of these gages can be made to get into practically any conceivable place and tell you whether a dimension is right or wrong — and *how much* wrong. They can be furnished for comparing dimensions or for direct measurements.

Used in checking patterns, cores, castings, forgings, tubing, shells, bottles, plastic shapes, etc. Ask us about a gage with jaws designed to fit your work.

FEDERAL PRODUCTS CORPORATION
1144 Eddy Street, Providence 1, R. I.

★ ★ ★ ★ ★ FEDERAL ★ ★ ★ ★ ★
PRECISION MEASURING INSTRUMENTS

▲ Mention Item NED-1944 when writing ▲

will help you get full benefit of the advantages of SIL-FOS and EASY-FLO

—in brazing ferrous, non-ferrous and dissimilar metals. It shows the right way to use these two low-temperature silver brazing alloys to get full benefit of their speed, reliability and economy in making high-strength, ductile, corrosion-resistant joints. One or more copies will be mailed to you on request.

Ask also for BULLETIN 12-A giving full SIL FOS and EASY-FLO details.

HANDY & HARMAN 82 Fulton St., New York 7, N. Y.
Agents in Principal Cities. In Canada: HANDY & HARMAN of Canada, Ltd., Toronto

▲ Mention Item NED-1945 when writing ▲

...NOT just a pump and conventional motor

IN A WORTHINGTON MONOBLOC you get a Worthington centrifugal pump and a drip-proof motor wedded into a simple space-saving unit. Extra high supports avoid floor flooding. Elimination of need for base plate saves installation cost. Short shaft extension maintains alignment ... keeps operation smooth and trouble-free.

You can get Monobloc Pumps from 1/4 to 60 H.P. for water supply, boiler feed, circulation, process waste, etc. Write for Bulletin W-321-B14 for further information —and for the last word in facts call our nearest District Office or Authorized Dealer.

WORTH BEHIND THE NAME WORTHINGTON

CP4-5

WORTHINGTON PUMP AND MACHINERY CORPORATION
Standard Products Division, Harrison, N. J.

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MORE
SERVICE AND PROTECTION
with Surety Sureseal Synthetic
GLOVES APRONS SLEEVES

Surety's remarkable Sureseal synthetic means super resistance to acids, chemicals, oils, solvents, paints. Endorsed by users everywhere as "Quality that endures." . . . Write for new Surety bulletins, get complete information on gloves, aprons and sleeves.

THE Surety RUBBER COMPANY
CARROLLTON, OHIO

▲ Mention Item NED-1947 when writing ▲

A Helping Hand ... for Busy Motors

Will the life of your electric motors equal that of the equipment in which they are used? Chances are that they will if these motors are equipped with dependable efficient Klixon Motor Protectors.

Built into the motor by the manufacturer, small, simple, inexpensive Klixon Protectors give motors a helping hand by preventing overheating and burnouts. Every time a busy motor gets over-loaded and dangerously hot—"click" and the protector cuts the motor "off" the line. Once the motor cools to safe operating temperature—it turns the power "on" either automatically or by manual reset depending on the type of protector you specify.

Get the most out of your motors, insist on built-in Klixon Protectors with every motor you buy. They permit maximum operating capacity yet provide complete motor safety. Available for A. C. motors, all sizes; and D. C. motors up to 30 volts.

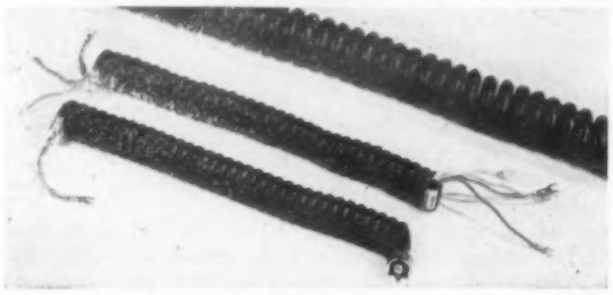
KLIXON MOTOR PROTECTORS

SPENCER THERMOSTAT CO., ATTLEBORO, MASSACHUSETTS

▲ Mention Item NED-1948 when writing ▲

RETRACTABLE CORDS

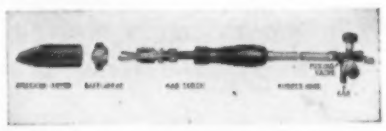
Covered with spirally molded rubber jackets, these retractable electrical cords are designed to retain normal position. No wire springs or separate mechanical devices need be used.



Kellogg Koiled Kords are available in natural rubber as well as in Neoprene and Buna-S. These cords are adaptable for telephone instruments as well as all types of electric appliances. They are available at present only for essential war goods. Made by Cordage, Inc., 6650 South Cicero Ave., Chicago, Ill.

▲ Mention Item NED-1949 when writing ▲

SOLDERING TORCH

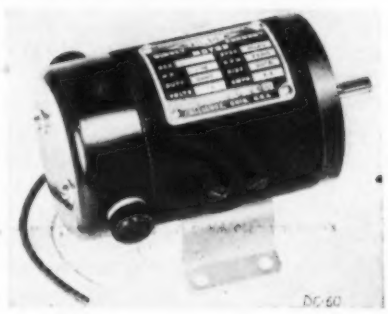


Internally gas fired, this No. 152 Schmidt soldering torch operates on any air pressure line and is adaptable particularly for shop use in such operations as connecting electrical windings, job soldering operations or production work. Torch heats to working temperature within 60 seconds and to red heat within 4 minutes. Simple regulation permits holding of heat constant at any selected temperature.

All parts are easily replaced. Different sizes of soldering coppers are quickly interchangeable. Torch is available in two styles, one operating on natural gas and another on gasoline or artificial gas. Gasoline vaporizer unit may be furnished to supply fuel to latter model where piped gas is not available. Air line pressure of at least 20 pounds per square inch is required for operation. Made by National Electric Coil Co., Columbus, Ohio.

▲ Mention Item NED-1950 when writing ▲

AIRCRAFT ELECTRIC MOTOR



Added to regular line of aircraft type direct current motors, this series motor operates continuously on 13-volt direct current at 7.4 amperes, delivering full 1/12 horsepower at 7500 revolutions per minute. Light in weight, design features totally enclosed ball bearing construction. It measures 4 5/16 inches long by 2¾ inches in diameter and weighs 3½ pounds. This basic design can be applied with either shunt or series windings for desired voltage, current drain and horsepower output up to 1/10 horsepower, consistent with speed and duty. Made by Alliance Mfg. Co., Lake Park Blvd., Alliance, O.

▲ Mention Item NED-1951 when writing ▲

BUS-BAR
Formed in 2 PLANES to .001" ACCURACY with

DI-ACRO BENDER NO. 2

Many electrical and other parts can be duplicated without dies, saving Man Hours and Critical Materials and helping to meet rush delivery schedules. DI-ACRO Precision Machines—Shears, Brakes, Benders—form angle, channel, rod, tube, wire, moulding, strip stock; bi-metals, dielectrics, sensitized materials, fiber slot insulation, frequency reeds, etc.

Send for Catalog "DIE-LESS DUPLICATING"

showing all models of DI-ACRO Benders, Shears and Brakes, and many examples of parts formed by "DIE-LESS DUPLICATING".

1/4 ACTUAL SIZE

A heavy Copper Bus-Bar for panel board and terminal assemblies is illustrated, accurately duplicated in two planes with angles formed both flat and edgewise, across the material horizontally and vertically. DI-ACRO Bender No. 2 has a forming radius up to 6" and capacity of 1/2" cold rolled solid steel bar or equivalent.

"DIE-LESS" DUPLICATING
The DI-ACRO System of METAL DUPLICATING Without Dies

DI-ACRO PRECISION MACHINES DIE-LESS DUPLICATING

O'NEIL-IRWIN MFG. CO.
354 EIGHTH AVE. SOUTH • MINNEAPOLIS 15, MINN.

▲ Mention Item NED-1952 when writing ▲

OIL AND GREASE ABSORBENT . .

Showing the fast capillary attraction of Absorbo on an oil spill.

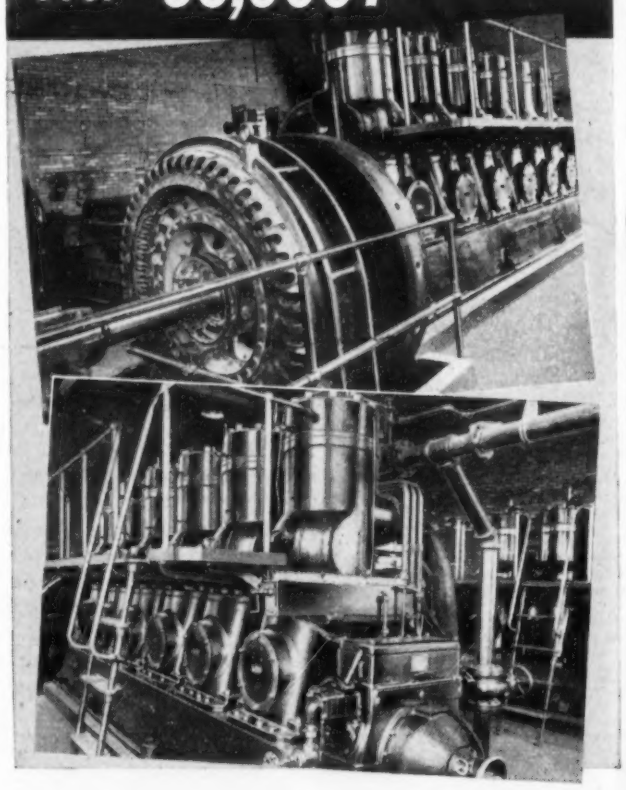
FIDELITY ABSORBO, a newly developed dry compound, removes oil and grease accumulations from floors of any type—wood, metal, concrete or linoleum. It absorbs up to 50% of its weight, quickly and easily. Composed of an inert, odorless material that is non-abrasive, it is harmless to skin, clothes, metal surfaces and flooring.

FIDELITY ABSORBO can be sprinkled on floors subject to recurring oil or grease accumulations, and allowed to remain, or where the condition is temporary, swept up after a few moments. In either case, the floor will be dry and footsure. Absorbo is approved by the Underwriters' Laboratories as a Class I noncombustible. Even when completely saturated with oil, it resists burning and prevents fire from spreading.

Trial 50 lb. bag $2.75 F.O.B. Newark, with unconditional money-back guarantee. Substantially reduced prices on quantity orders. Territories open for distributors. Write: FIDELITY CHEMICAL PRODUCTS CORP., Dept. B 7, 430 Riverside Avenue, Newark 4, N. J. —Advt.

▲ Mention Item NED-1953 when writing ▲

Just Two Fairbanks-Morse Diesels Saved This Company over $58,000!



In 1934 Cargill, Inc., installed two Fairbanks-Morse Diesels in their terminal grain elevator at Minneapolis, Minnesota.

Since then—

★ This Fairbanks-Morse equipment has generated over 6,500,000 kilowatt hours
★ Has reduced power costs by more than 50%
★ Has saved over $58,000 in operating costs
★ Is now showing a *net* profit of $7,000 a year

That's the record of two Fairbanks-Morse Diesels in a plant where power demand fluctuates sharply with high peaks and comparatively small energy consumption. It is a record that combines substantial savings with outstanding performance.

If you need more power—lower-cost power, write Fairbanks, Morse & Co. and let their Engineering Department study your needs. There is no obligation. Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

BUY WAR BONDS

FAIRBANKS-MORSE
DIESEL ENGINES, PUMPS, MOTORS, GENERATORS, WATER SYSTEMS, SCALES, STOKERS, FARM EQUIPMENT, RAILROAD EQUIPMENT
Diesels

▲ Mention Item NED-1954 when writing ▲

AN IMPROPERLY CLEANED PLANT *IS NOT CLEAN*— SUCTION *ALONE*, WILL DO

Clean it properly with

TORNADO

PORTABLE INDUSTRIAL VACUUM CLEANER

It takes the strong suction of a TORNADO Portable Electric Vacuum Cleaner to do a thorough job of cleaning. With its 1 h.p. G. E. motor, 49-inch waterlift, 175 c.f.m., and 12-gallon tank, it has both power and capacity to get dirt, dust, chips and litter all out thruout the plant.

Stop the onslaught of dust and dirt, by removing them from walls, floors, pipes and line-shafting with TORNADO power and portability—saving wear and tear, damage and repairs on valuable, productive machinery. Soon pays for itself in time, labor and maintenance.

Write for Details and FREE TRIAL Offer

BREUER ELECTRIC MFG. CO.
5106 N. RAVENSWOOD AVE., CHICAGO, ILL.

TAKE THE DUST OUT OF INDUSTRY

with BREUER'S BALL BEARING **TORNADO** PORTABLE INDUSTRIAL VACUUM CLEANER

▲ Mention Item NED-1955 when writing ▲

new speed in making prints from roll stock

New simplicity and ease of operation are embodied in this Bruning "75-157" Printer-Developer, designed for producing prints from roll stock with one-man operation. An ingenious balanced take-up roll takes up all slackness in paper . . . provides positive protection against creasing of prints. Roll-up tension can be adjusted "light" or "heavy" in accordance with the weight of paper stock. Roll of finished prints can be started without necessitating operator leaving front of machine, eliminating paper waste. Developed prints are wound on removable hollow tube. Complete information on this machine and on other Bruning BW printing and developing machines will gladly be sent on request. CHARLES BRUNING COMPANY, INC.

BRUNING
SINCE 1897
NEW YORK CHICAGO LOS ANGELES
Branches in 14 Principal Cities (2301-335)

▲ Mention Item NED-1956 when writing ▲

Announcing—

THE NEW SUPER **STANDARD**
CARBIDE TIPPED
SHELL END MILLS AND FACE MILLS!

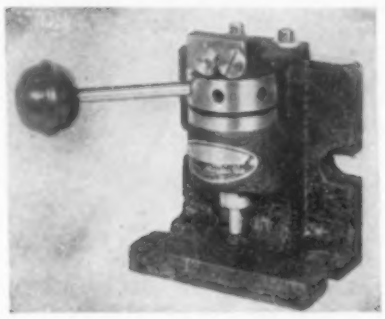
Another step forward in Carbide Tipped Standardization!

Write TODAY for literature, prices and complete details of these Super quality, Super economical Carbide Tipped Cutters.

SUPER TOOL COMPANY
Carbide Tipped Tools
21650 Hoover Road Detroit 13, Michigan
4105 San Fernando Road Glendale 4, California

▲ Mention Item NED-1957 when writing ▲

WORK HOLDING CHUCK



Using all sizes of No. 00 standard collets, this Micro-Chuk will handle 1/16 to ⅜-inch round work, 3/32 to 7/32-inch squares and ⅛ to ¼-inch hexagonal pieces. It also accommodates all standard removable drill bushings from No. 54 to 5/32-inch drill sizes. It is constructed with ground angle base which permits clamping in either horizontal or vertical position. It may be used on face plate of any lathe, or on milling machine dividing head for collet or external work. It can be clamped to face plate of external or internal grinders.

Device finds wide range of applications for second operations in holding work for drilling, reaming, counterboring, milling and countless other operations. Work is easily inserted, locked and unlocked with smooth operating hand lever. Precision made, all surfaces are square. Made by **The Micro Master Products Co.**, 919 W. North Ave., Chicago, Ill.

▲ Mention Item NED-1958 when writing ▲

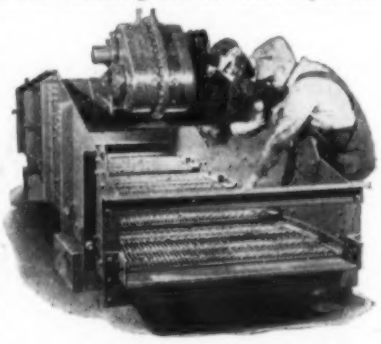
DEGREASING SOLVENT

Non-inflammable and non-combustible, alkyl aromatic solvent concentrate is designed for use in metal washing machines. It contains no low volatiles and forms clear solutions with water. These solutions are claimed to be completely stable at elevated temperatures and inhibit rusting of cleaned parts. Solvent is processed from readily available chemicals. Made by **The Curran Corp.**, Dowling Bldg., Malden, Mass.

▲ Mention Item NED-1959 when writing ▲

VIBRATING SCREENS

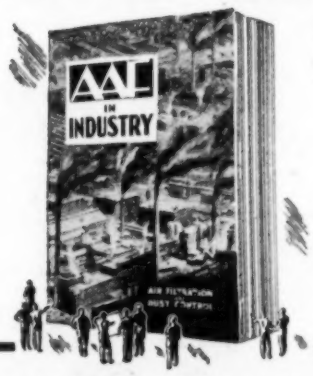
Used for wet and dry screening, washing and dewatering processes, end tension deck which is now available on low head Aero-Vibe and Ripl-Flo vibrating screens has improved tensioning principle. This unit maintains even bed depth in screening processes for coal, ore, rock, chemicals and food industries. Screen is tensioned by clamp bars at ends and by intermediate adjustable bars when more than two screen sections are used. Distributing plate at feed and end of screen distributes material uniformly over entire width of screen to reduce surface wear.



Sections of deck may be turned end for end and upside down. Supporting bars on underside of deck are covered with molded rubber strips and act as independent drip strips to assist in draining of material in washing and dewatering operations. Feed end of each section can be furnished with blank surface designed to obtain pool-washing effect for scrubbing and scouring material handled. Made by **Allis-Chalmers Co.**, 6900 Norman St., Milwaukee 1, Wis.

▲ Mention Item NED-1960 when writing ▲

Whatever your Dust Problem—
ASK FOR HELP FROM AAF



Whether you have a problem involving the elimination of atmospheric dust or the control of process dust—AAF engineers are ready *now* to suggest a dust-control system to meet your specific requirements.

May we send you a free copy of our illustrated booklet "AAF In Industry"? This book describes the complete line of AAF equipment and its many applications. There's no obligation, of course.

BUY WAR BONDS

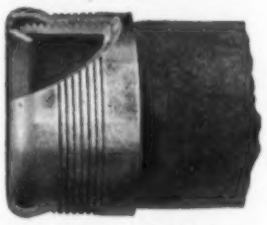
AMERICAN AIR FILTER COMPANY, INC.
INCORPORATED
391 CENTRAL AVE., LOUISVILLE 8, KY.

IN CANADA: DARLING BROS., LTD., MONTREAL, P. Q.

▲ Mention Item NED-1961 when writing ▲

HAVE YOU EVER CONSIDERED using WEDGE PROTECTORS?

Many are using WEDGE Protectors to protect threads on valuable parts from damage while in storage, handling or shipping. Valuable parts can be economically protected. We make all types and designs of protectors, closing plugs, plain ends, etc. Write.



Patent No. 2,156,169

Split Feature Patented

WELD Pipe The NEW and BETTER way with WEDGE Split CHILL RINGS

WEDGE Chill Rings with the Patented SPLIT Feature is an important development that has greatly increased the efficiency of pipe welding. If you weld pipe be sure to investigate. They enable you to weld FASTER and BETTER and produce STRONGER joints. Write.

WEDGE PROTECTORS, INC.
9528 RICHMOND AVE. CLEVELAND 5, OHIO

Use WEDGE Chill Rings-Thread Protectors

▲ Mention Item NED-1962 when writing ▲

WATER ANYWHERE . . . *Made Safe* TO DRINK!

In steaming jungles or sun-parched desert lands, combat engineers must be able to distribute safe, potable water the same day fighting forces "take over." For this purpose portable purification units are used, their pumps powered by gasoline engines. Another of the many vital services by hundreds of thousands of rugged, dependable Briggs & Stratton engines now on duty with our armed forces.

There's still plenty to be done, but our increased facilities now enable our engineering and development staffs to take on new assignments. We're geared up to help you on gasoline-engine-powered equipment for war production — or for your postwar requirements. The outstanding war record established by Briggs & Stratton engines—in a great range of standard and special applications — is conclusive evidence that *"It's powered right—when it's powered by Briggs & Stratton."*

BRIGGS & STRATTON CORP.
MILWAUKEE 1, WIS., U.S.A.

BUY WAR BONDS FOR VICTORY!

4 CYCLE BRIGGS & STRATTON GASOLINE ENGINES

▲ Mention Item NED-1963 when writing ▲

Announcing

NEW IMPROVED CESCO HELMETS

● At a time when welders need superior equipment, CESCO announces a new, improved line of welding helmets.

These newly designed helmets are sturdier and simpler and have many fool-proof features.

Safety engineers give them unqualified approval. Welders who have tested them say they can't be beat for comfort. (That's an "earmark" of all CESCO head and eye safety equipment.)

AVAILABLE NOW!

Increased production permits offering these helmets immediately. Write today for your copy of CESCO'S NEW Welding Catalog—just off the press.

CESCO

CHICAGO EYE SHIELD CO.
2329 Warren Boulevard • Chicago 12, Illinois

CESCO FOR SAFETY

▲ Mention Item NED-1964 when writing ▲

New 16-page CATALOG on *Aircraft* RELAYS and ACCESSORIES

★ This 16-page catalog gives operating characteristics, dimensional drawings, wiring diagrams, and general construction information on aircraft relays, contactors, solenoids and aircraft accessories. Among the relays described are five variations of the versatile B-2A Relay built to A.A.F. specifications.

In addition, there are several general purpose aircraft-radio relays; a tiny midget relay weighing less than an ounce; heavy-weight and the new lightweight solenoid contactors (A.A.F. types A-3, B-4, B-5A, B-6A, B-7A); eight solenoids; six types of gun switch handles; a control wheel; propeller protractor; and a bomb and flare release.

This catalog is yours for the asking, when requested on your company letterhead.

Write Today

GUARDIAN ELECTRIC
1626-D W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN WAR INDUSTRY

▲ Mention Item NED-1965 when writing ▲

CORDLEY

Electric WATER COOLERS

The major part of Cordley production has been required by U. S. Navy and Maritime ships. Uncle Sam confirmed the judgment of industrial managers who always recognized the necessity for adequate drinking water facilities for employees. Cordley Electric Water Coolers now released for military and industrial requirements. Write us about your needs.

Remember the name

CORDLEY AND HAYES
457 FOURTH AVE., NEW YORK 16, N. Y.
Specialists on Drinking Water Equipment Since 1889

▲ Mention Item NED-1966 when writing ▲

LEATHER LINED TONGS

Developed especially for newsprint industry, these leather lined steel tongs can lift heavy rolls of paper without marring them. Tong shown has maximum diameter of 38 inches and lifting capacity of 3000 pounds. It is designed for mill and warehouse use and is suspended from overhead crane. It operates automatically. Thick hide lining provides firm grip on roll. Tongs are built to any specification. Made by **Heppenstall Co.**, 4621 Hatfield St., Pittsburgh, Pa.

▲ Mention Item NED-1967 when writing ▲

VENDING MACHINE

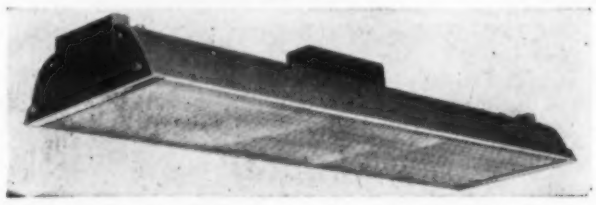
Operating smoothly by means of simple inner mechanism, Gards No. 2 sanitary napkin vending machine is wooden cabinet, finished in white Duco. Insertion of coin and one turn of knob to right dispenses napkin in flat package.

Cabinet measures 13½ inches wide, 17¼ inches high, 9 inches deep and holds 12 sanitary napkins. Gards napkins are designed for emergency use and give protection, comfort and super-absorbency. Size and thickness of rayon cellulose fillers and softness of surgical gauze provide comfort and convenience. Napkins are highly soluble. Made by **The Hospital Specialty** Co., 1993 E. Sixty-sixth, Cleveland 3, Ohio.

▲ Mention Item NED-1968 when writing ▲

FLUORESCENT FIXTURE

Of improved design this industrial fluorescent fixture features completely enclosed lamps with ribbed glass bottom and end shields. This keeps out dust and reduces maintenance, while



maintaining lighting efficiency with minimum of cleaning. Ballast box is located on top of fixture permitting it to operate 30 per cent cooler, improving operation and increasing tube life.

Fixture is available in two, three and four-tube sizes for 48-inch fluorescent lamps. It is of instantaneous starting type and there is no lamp flicker. Fixtures may be mounted either individually or end-to-end. Unit is approved by Electrical Testing Laboratory and Underwriters' Laboratory. Made by **R. & W. Wiley, Inc.**, Dearborn & Bridge Sts., Buffalo 7, N. Y.

▲ Mention Item NED-1969 when writing ▲

NEW BEAR DY-NAMIC BALANCING

Faster.. Simpler.. LOWER COST!

Performance reports from the many manufacturing plants and maintenance departments now using the new Bear Dy-Namic Balancing Machines show that these inexpensive machines solve the problem of eliminating couple-force vibrations and the wear, noise and inefficiency caused by them. Further, that the balancing is done faster; that any person of average intelligence can learn to operate Bear Balancing Machines in a few hours! These machines can be furnished in a wide range of sizes and models.

WRITE, WIRE OR PHONE details of your problem or write for FREE DATA BOOK

BEAR

BEAR MFG. CO., DEPT. NED, INDUSTRIAL DIV., ROCK ISLAND, ILL.

▲ Mention Item NED-1970 when writing ▲

WHAT PRICE A "FROZEN" PIPE JOINT?

Ever figured in dollars and cents how much it cost to loosen a "frozen" pipe connection? Why not use Key Graphite Paste? It seals your joints firmly against oil, gas, chemicals, steam and pressure and yet keeps the threads "alive" for quick disconnecting.

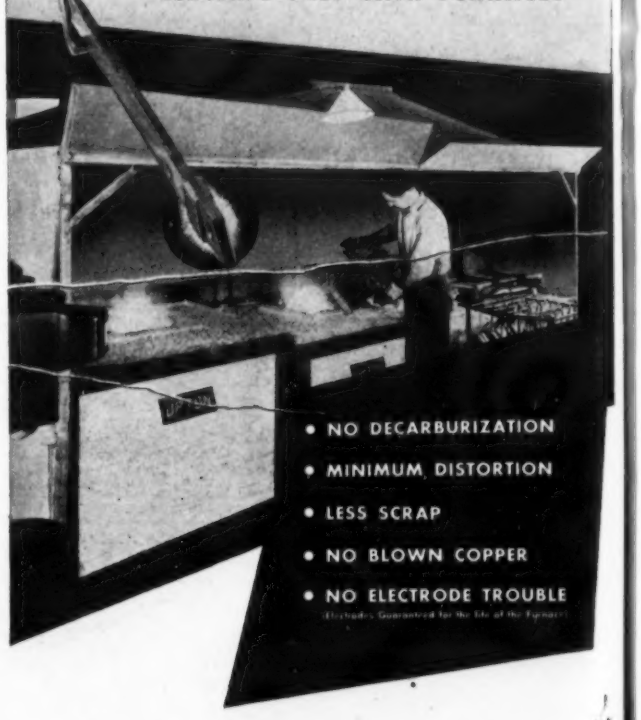
This graphite compound is always ready to use. It does not spoil in the can. May we send you a generous free sample?

EAST ST. LOUIS, ILLINOIS

KEY COMPANY
2601 McCasland Avenue

▲ Mention Item NED-1971 when writing ▲

Selective COPPER BRAZING IN UPTON Sealed Electrode ELECTRIC SALT BATH FURNACES



• NO DECARBURIZATION
• MINIMUM DISTORTION
• LESS SCRAP
• NO BLOWN COPPER
• NO ELECTRODE TROUBLE

Selective Brazing of ordnance part subjected to intense impact is being handled at high speeds in Upton Electric Salt Bath Furnaces.

These same furnaces are being used, alternately, for high speed steel hardening and copper brazing.

When inquiring for additional information, please give complete details on your problem so that our answer to you can be complete.

See a battery of Upton furnaces in operation. In Detroit there is an installation of Upton Electric Salt Bath Furnaces kept in operation for your inspection.

Upton ELECTRIC FURNACE DIV.

COMMERCE PATTERN FOUNDRY AND MACHINE COMPANY
7439 Melville at Green Detroit 15, Michigan

▲ Mention Item NED-1972 when writing ▲

THUR-MA-LOX STAYS ON Hot or Cold Metal Surfaces

Easily applied by spray or brush, THUR-MA-LOX* #7 Black is a highly durable paint for surfaces subjected to abnormal temperatures...from "*ice cold*" right up to "*cherry red.*" This paint, with its unusual properties of elasticity withstanding contraction and expansion of metal, will not crack or peel and provides a protective coating that LASTS!

Engineers maintaining equipment now operating under war-time overload conditions will welcome this positive protection against abnormal temperatures; the elements; fumes of sulphur dioxide, carbon dioxide, acetic acid or chlorine.

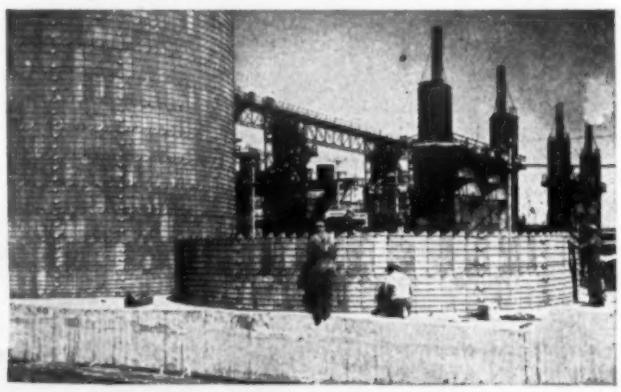
Write for Bulletin I-T describing THUR-MA-LOX more in detail and how to apply it.

*Patented

THE M. W. KELLOGG COMPANY
Exclusive Sales Distributors
225 BROADWAY NEW YORK 7, N. Y.
Representatives in: Chicago, Ill. • Detroit, Mich. • Pittsburgh, Pa. • Los Angeles, Calif.
THURMALOX COMPANY • *Manufacturers* • DOYLESTOWN, PA.

▲ Mention Item NED-1973 when writing ▲

Neff & Fry bin installation by one of the largest companies of its kind in the world—name withheld—Scores of comparable installations by other large companies—names also withheld.



However, it is not necessary to be a giant corporation and to install a dozen bins to benefit. For well on to thirty years companies, both small and large, have been storing, protecting and handling automatically the following "bulk flowable" materials in Neff & Fry bins.

CEMENT	ALUMINA	LIMESTONE	COTTON SEED	COKE	CLAY
CINDERS	GRAVEL	SAWDUST	MAGNESIUM	LIME	SAND
ENSILAGE	KAOLIN	GRAIN	WOOD PULP	COAL	SLAG
FERTILIZER	MORTAR	WATER	FOUNDRY SAND	SOYBEANS, ETC.	

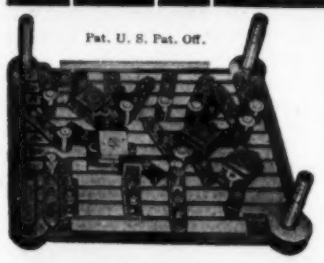
Stave or monolithic. Any type conveyor. Available to essential industry. Others should get orders on file.

GET 1944 CATALOG AT ONCE.

THE NEFF & FRY COMPANY, CAMDEN, OHIO

NEFF & FRY STORAGE BINS

▲ Mention Item NED-1974 when writing ▲



WHISTLER ADJUSTABLE DIES

•

Precision Perforating and Notching
READY FOR PRODUCTION

Multiply the production of your presses. More holes in given area—reduces "down" time—years of use in different pattern arrangements—complete interchangeability of parts—no special tools—in all standard sizes from 1/32". Whistler dies, tools and production machinery are used the world over.

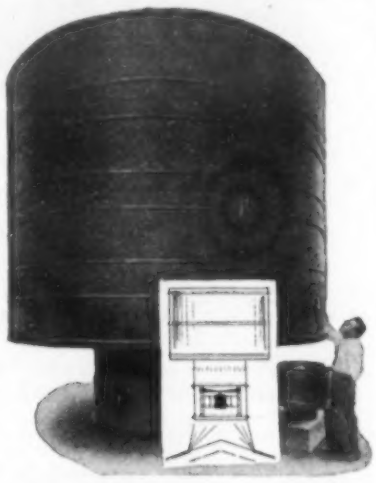
Every Production Executive should have this Catalog. Write:

S. B. WHISTLER & SONS, Inc.
752-756 MILITARY ROAD BUFFALO, N. Y.

▲ Mention Item NED-1975 when writing ▲

FAN ROOF VENTILATORS

Ranging in capacity from 840 to 113,500 cubic feet of air per minute, Asbo power-fan provides maximum ventilation from this line of round roof ventilators. Latter are so designed as to afford maximum output, freedom from down-draft and complete weather protection. Made of Felt-Cote asbestos-protected metal, these units may be mounted on practically any style of roof.



Fan blades are of propeller design and are claimed to provide large volume of air movement with minimum of power. Fan serves to boost normal capacity of gravity type ventilators. Fans are mounted directly on motor shaft. Fans range in size from 9 to 90 inches for ventilator diameters ranging from 12 to 96 inches. Made by **American Steel Band Co.**, P. O. Box 565-N, Pittsburgh, Pa.

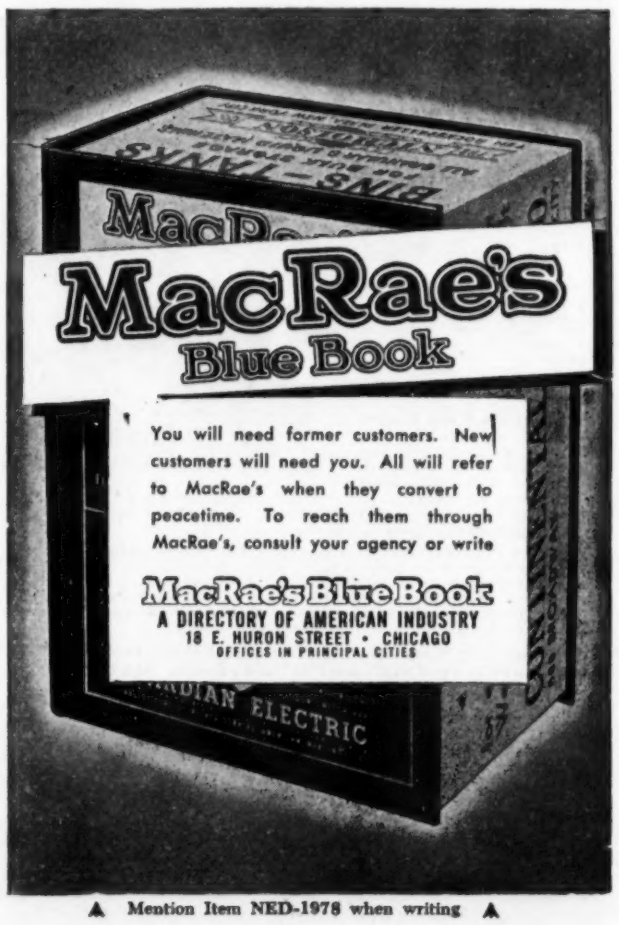
▲ Mention Item NED-1976 when writing ▲

SPEED INDICATOR

Developed for measuring rotational and surface speeds of various kinds of mechanical equipment, Jaeger speed indicator adds up number of revolutions over period of 6 seconds and shows revolutions per minute without any calculations. Indicator differs from centrifugal type tachometer in that it does not show instantaneous speed or speed variations, but it has advantage that hands stop automatically at points which indicate measured speed. One has as long a time to read instrument as one may wish. Both revolutions per minute and feet per minute can be measured.

Indicator is not much larger or heavier than pocket watch. There are two ratings of instrument; one for all speeds up to 2000 revolutions per minute and the other for speeds up to 10,000 revolutions per minute. In low speed instrument, one revolution of hand on large dial indicates 100 revolutions per minute in equal divisions of 1.0 revolutions per minute, readable to 0.5 revolutions per minute. One revolution on small dial indicates to 1000 revolutions per minute. Similarly, in higher speed instrument, one revolution of hand on large dial is from 0 to 1000 revolutions per minute in equal divisions of 10 revolutions per minute, readable to 5.0 revolutions per minute. Small dial indicates to 10,000 revolutions per minute. Suitable case is provided for indicator and accessories and measures 3½ x 4⅞ x 1½ inches. Made by **James G. Biddle Co.**, 1215 Arch St., Philadelphia 7, Pa.

▲ Mention Item NED-1977 when writing ▲

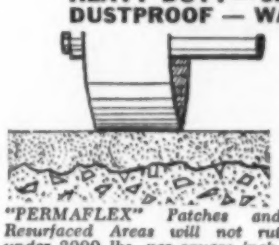


▲ Mention Item NED-1978 when writing ▲

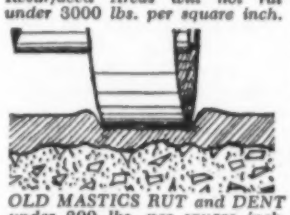
***Use* "PERMAFLEX"**
Resurface and Patch INDUSTRIAL FLOORS

Bonds Perfectly—Never Comes Loose
No Chipping Required—Install directly over your old concrete, wood, brick or stone floors, walks or drives. Interior or Exterior.

HEAVY DUTY—SLIPPROOF—RESTFUL
DUSTPROOF — WATERPROOF — QUIET



"PERMAFLEX" Patches and Resurfaced Areas will not rut under 3000 lbs. per square inch.



OLD MASTICS RUT and DENT under 200 lbs. per square inch.

Many users apply "Permaflex" over new concrete to prevent wearing away of the concrete under truck wheels and thus preserve structural strength.

The most severe trucking conditions in 400 of the largest industrial plants show no destructive effect on "Permaflex" after years of use.

Every conceivable trucking condition was fully met.

AMAZING! UNBELIEVABLE!
Until you try **"PERMAFLEX"**

Users include U. S. Steel, Bethlehem, Republic, General Motors, A. O. Smith, Western Electric and leading Railroads.

TEST 100 SQ. FT.—BE CONVINCED

Send for literature and trial offer.

INSTALL COMPLETE **12½c** per square foot

PERMAFLEX PRODUCTS COMPANY
1848 North Front Street, Philadelphia, Pa.

▲ Mention Item NED-1979 when writing ▲

MAKE YOUR OWN
- *Perfect* BLUEPRINTS
- BLACK-*and*-WHITE PRINTS
- *Authentic* PHOTO COPIES

-and save 80%! OF YOUR PRESENT COST

***SPEED UP* PRODUCTION!**
ONLY 3 MINUTES . . .

. . . After Tracings leave your Drafting Boards, *Perfect Blueprints* or Black-and-White Prints are ready for use. No more delays waiting for outsiders to make delivery of prints at excessive costs.

With VICTORAY Your Cost of Blueprints will be approximately 1c per square foot

Check this against your present cost. VICTORAY makes professional prints. Can be operated by any novice. Printing is done in daylight.

Printing life of lamps 750 hours
Renewal cost of set of lamps $1.60

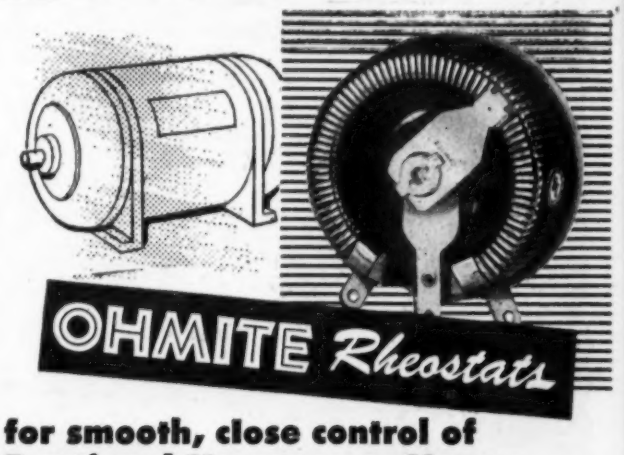
VICTORAY makes blueprints, black-and-white prints, photo copies — and serves as photo print dryer. No other unit does so much, yet costs so little to own and operate! **$127.50** NET F. O. B. Factory

Sample Supply of Blueprint Paper & Developer Included

SHIPMENTS SUBJECT TO SATISFACTORY TRIAL

VICTORAY CORPORATION
GENERAL OFFICES AND PLANT
BATTLE CREEK • MICHIGAN

▲ Mention Item NED-1980 when writing ▲



for smooth, close control of Fractional Horsepower Motors . . .

Ohmite Rheostats are used to control the speed of fractional and integral horsepower motors, in countless applications, because:

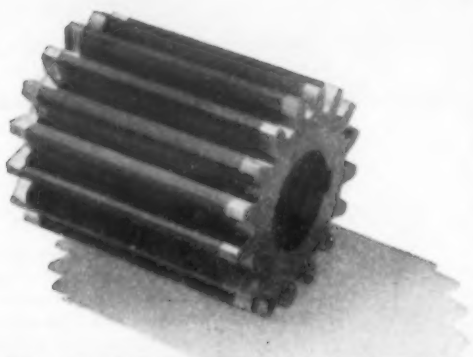
(1) They provide permanently smooth, close, variable speed control.
(2) They are compact and dependable.
(3) They have long life. There is nothing to shrink, shift or deteriorate.

Made in straight or tapered winding, in single or tandem units, to suit each requirement.

Write on company letterhead for Catalog and Engineering Manual No. 40.

OHMITE MANUFACTURING CO.
4841 W. Flournoy St. Chicago 44, U.S.A.

▲ Mention Item NED-1981 when writing ▲



G-E FABROIL GEARS

The application of plastic materials to machines has done much to reduce objectionable noises which arise from gear trains. In clock mechanisms, automobile timing gears, variable speed transmission machine drives, and gear reductions of every description, nonmetallic Fabroil gears are introduced for their noise reducing qualities. Fabroil gears are 30 to 40 times as resilient as steel, permit tooth deflections which absorb vibrations, are strong, tough and long wearing. They operate at their best when alternated in a gear train with metal gears. For further information write Section L-239 One Plastics Ave., Pittsfield, Mass.

PD-298

PLASTICS DIVISIONS
GENERAL ELECTRIC

▲ Mention Item NED-1982 when writing ▲

Repairs CASTINGS

BOILERS, PIPES, ENGINES, VALVES, FITTINGS

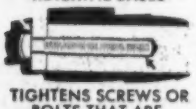
SEALS CRACKS IN PIPES & FITTINGS

FIX-IRON

STOPS LEAKS

MAKES MORE SOLID SUPPORT FOR UNEVEN MACHINE BASES

Here's a handy, inexpensive, powdered iron compound for repairing broken, cracked, or defective metal castings, boilers, piping, etc.; making joints, seams, and loose parts secure; stopping leaks in pipe lines, boilers, tanks, and many other industrial uses.



TIGHTENS SCREWS OR BOLTS THAT ARE LOOSE OR STRIPPED

FIX-IRON is in powder form—mixed with water as used. *Hardens like iron,* and after metallizing possesses same expansion and contraction properties as iron. Can be used on all metals—iron, steel, brass, copper, lead, aluminum, etc.—also on wood. Requires no heat. Quickly, easily applied with putty knife. Repaired metal is ready for use in a few hours or less.

PLUGS LEAKS AT RIVETED JOINTS & SEAMS

FIX-IRON is inexpensive—a time, labor, money saver! Fully tested and guaranteed by So-Lo Works, long experienced in manufacture of industrial cements and adhesives. Get FIX-IRON now from your supply house or write Dept. A-4.

"Hardens Like Iron . . . Holds Like Iron!"
QUICK, EASY TO USE

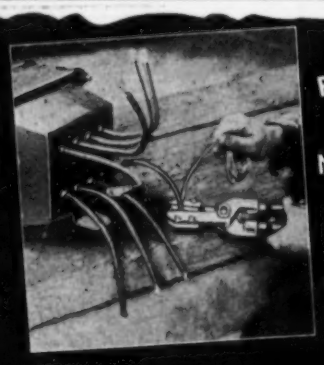
So-Lo Works, Inc., LOVELAND, OHIO

▲ Mention Item NED-1983 when writing ▲

INSTANT HEAT

CONTROLLED HEAT

SAFER



NO PREHEATING

NO MOLTEN SOLDER

NO OPEN FLAME

Soldering *Revolutionized!*

IDEAL "Thermo-Grip"
ELECTRIC SOLDERING TOOLS

"Thermo-Grips" concentrate instantaneous, intense heat directly *on the part* to be soldered—don't simply heat the iron. Melt new high melting point solders, quick! Not just ordinary soldering irons, but a group of specialized tools to do specific jobs—BETTER.

Write for FREE DETAILED LITERATURE

PROMPT DELIVERY

IDEAL *Sycamore*
IDEAL COMMUTATOR DRESSER CO

1032 Park Avenue Sycamore, Illinois

SALES OFFICES IN ALL PRINCIPAL CITIES
In Canada: Irving Smith Ltd., Montreal, Quebec.

▲ Mention Item NED-1984 when writing ▲

PLASTIC HAMMERS

Semi-soft plastic is used in this line of Nupla hammers which are available for metal forming of dural, aluminum, brass, bronze and other similar metals, as well as for machine shop work on finely finished parts. They may be used for pressing inserts into molds and for performing similar tool and die work.

These hammers are available in seven sizes and weights ranging from 5 ounces to 2 pounds. Grade A Cryst-O-Flex material is intended for general machine work and hardened B material for metal forming. Special plastic hammerhead sleeves which prevent sparking are available for work with explosive materials.

Whenever striking surfaces become worn, small slices may be cut from head with band saw, edges polished on sander and new striking surface formed. Plastic is unaffected by gasoline, oil or alcohol. Made by **New Plastic Corp.**, 1017 North Sycamore Ave., Los Angeles, Calif.

▲ Mention Item NED-1985 when writing ▲

WHEELED EXTINGUISHER

Combining quick mobility of portable units with fire fighting power of 100 pounds of highly compressed carbon dioxide, model 100 wheeled fire extinguishers protect special oil and

electrical hazards in power plants, as well as oil pumping stations, garages and large storage spaces. These wheeled units are designed to extinguish larger and more serious fires than hand portable extinguishers can handle.

Extinguisher is manufactured with non-conducting plastic nozzle shield which is equipped with long handle-grip and shut-off valve. This permits conservation of gas during changes of fire fighting position. Unit is approved by Underwriters' laboratory, bearing their B and C rating as suitable for all flammable liquid and electrical fires. Made by **Walter Kidde & Co.**, 140 Cedar St., New York 6, N. Y.

▲ Mention Item NED-1986 when writing ▲

DO YOU KNOW?

"The Surface Condenser" is title of new 16-millimeter sound motion picture film which is sequel to educational film, "The Magic of Steam", which deals with steam turbine operation. It covers construction, operation and maintenance of surface condensers. Available for free showing to any industry or power plant, film may be purchased at cost for $24 for permanent use. Issued by Allis-Chalmers Mfg. Co., 6900 Norman St., Milwaukee 1, Wis.

▲ Mention Item NED-1987 when writing ▲

LYON-*Raymond*

Die Handling Trucks
for Every Need

Die Handling Trucks are doing a notable job of stepping up efficiency and safety in numerous plants. Illustrated is one of a battery of Hydraulic Die Handling Trucks at work in an airplane factory.

LYON-Raymond can furnish Die Handling Trucks with capacities up to 30,000 lbs. They're built in pedestal, cantilever or toggle lever types. Some are operated by a hydraulic foot pump (single or 2-speed) or by a 2-speed hydraulic hand pump; others by electric or gasoline-motored hydraulic pumps.

Certain LYON-Raymond designs have (1) die separating and turning device, with or without die clamps; (2) winch for drawing die from table into press and back; (3) roller top table with retaining bars; (4) revolving table; (5) auto-type steering at both ends for close maneuvering. Some standard design trucks are carried in stock; others are built to meet particular needs.

"Die Handling Made Easy" is a bulletin showing methods that have proved efficient in many shops. Ask for it.

LYON-Raymond
Corporation
327 Madison St Greene, N. Y.

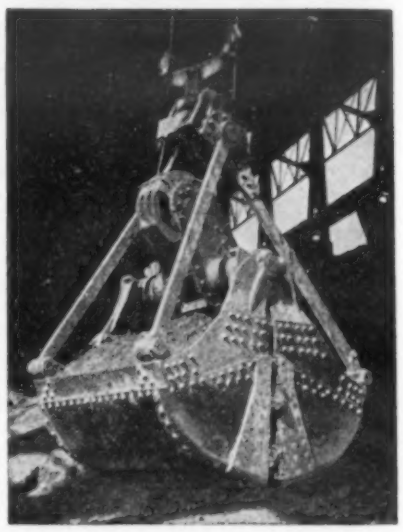
▲ Mention Item NED-1988 when writing ▲

BLAW-KNOX BUCKETS

take the least of your crane time—handle more pay load

Send for the catalog which describes the bucket you need—

- No. 1853—Blaw-Knox Buckets for Cement, Chemical and Fertilizer Plants.
- No. 1696—Blaw-Knox Buckets for Single Drum Hoists for use on Railroads, Mills, Foundries, Etc.
- No. 1745—Blaw-Knox Buckets for "Burtoning" handling Nitrates, Grain, Potash, Etc.
- No. 1757—Blaw-Knox 2 Line Lever Arm Buckets for Rehandling, Barge Cleanup, General Purpose, Hard Digging, Dredging.
- No. 1865—Blaw-Knox 4 Rope Buckets for Coal, Ore and Cleanup.
- No. 1752—Blaw-Knox Buckets for Incinerator Service.



Installation of a Blaw-Knox Bucket at a "trouble-spot" takes that worry off your mind—definitely—for each bucket is tailor-made for its particular job.

For digging and rehandling the many bulk materials throughout industry there's a Blaw-Knox Bucket.

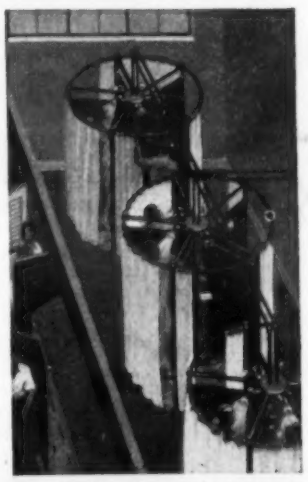
You can select a bucket from the many interesting catalogs listed above.

BLAW-KNOX DIVISION of Blaw-Knox Co.
2068 FARMERS BANK BUILDING, PITTSBURGH, PA.
NEW YORK · CHICAGO · PHILADELPHIA · BIRMINGHAM · WASHINGTON

▲ Mention Item NED-1989 when writing ▲

INSTALL SHOWERS
5-in-a-Group

Cut Piping Connections By 80 Per Cent



Top view shows the practical arrangement of the 5 shower stalls. Individual control of the water is provided each stall. One central supply of hot and cold water and one drain serve all five.

• Industry, schools, institutions, clubs—wherever shower facilities are required—piping connections and plumbing maintenance can be reduced with Bradley Multi-Stall Showers.

Ending the work-day or play-day with a shower bath is one sure way of instant refreshment—of keeping in shape for the next day's demands.

Industry—a big user of Bradley Multi-Stall Showers—knows them for their aid in preventing absenteeism and in keeping up efficiency. They wash away the dirt and grime that cannot be avoided in some kinds of work.

Coming partially assembled—requiring few plumbing connections, and reducing subsequent maintenance, Bradley Multi-Stall Showers are being installed in increasing numbers. Thousands and thousands of employees are enjoying them in the plants of such companies as Port Neches Synthetic Rubber Plant, Cleveland Graphite Bronze, Ford, DuPont, General Electric, Aluminum Co., and hundreds of others.

Below, a typical modern washroom showing portion of the Bradley 3-in-a-group Showers and several of the Washfountains.

Some of your departments, if not all, can be benefited through the provision of these sanitary group shower baths. They are available in 5-in-a-group and 3-in-a-group units.

Our Washroom Engineers can help you with floor plan suggestions. Catalog 4308 mailed on request. BRADLEY WASHFOUNTAIN CO., 2253 W. Michigan Street, Milwaukee 1, Wis.

Write for New Catalog 4308

BRADLEY *multi-stall showers*

▲ Mention Item NED-1990 when writing ▲

DUSTKOPS **STOP DUST** for ALL Abrasive Operations

Entirely Self-contained. Motor, fan, cyclone separator and filter. Fast installation. Flexible metal hose permits installation complete in minutes.

Compact and Portable. Even the biggest DUSTKOPS will usually fit in the existing space behind or beside the grinder.

Send now for complete information. To save time, describe the source of the dust when you write.

AGET-DETROIT CO.
603 First National Bldg., Ann Arbor, Mich.
Detroit Office: CAdillac 3090—Zone 26

MODEL 950 has a cyclone separator.

"READY TO GO" this model is for medium duty work of all kinds.

MODEL 600 has a spun glass filter.

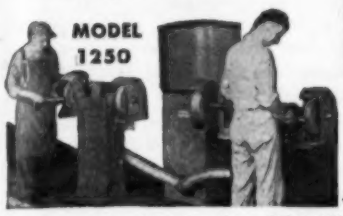
Ideal for light duty production surface grinding.

MODEL 600 Spun Glass Filter

For smallest grinders, laboratory work.

MODEL 1250 has a cyclone separator.

Handles all the dust from this armor grinding job easily.



MODEL 1250

Four wheels exhaust into a single Model 1250 that gets all the dust.

▲ Mention Item NED-1991 when writing ▲

The GROVE Pneumatic Gauge COMPARATOR

GROVE SIMPLICITY ACCURACY SAFETY

The Portable Method of Checking All Types Of Pressure Gauges

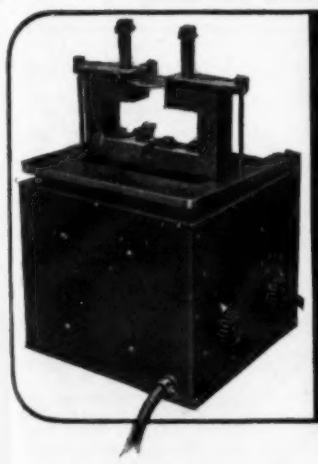
- Compact, portable and fully self-contained.
- Built-in high capacity rechargeable air cylinders.
- Precision laboratory test gauges accurate to within ¼ of 1% full scale.
- Completely equipped with tubing, connections and accessories.

Figure the amount of time, trouble and money you save when you check your pressure gauges "in-place" without removing them from their panels or mountings; without disturbing existing line connections. The portable Grove Pneumatic Gauge Comparator gives you this fast accurate means of accurately checking any service gauge in service. Write today for Bulletin 300.

GROVE REGULATOR COMPANY
6533 Green Street, Emeryville, California
Branch Offices:
5644 Navigation Blvd., Houston Texas—30 Rockefeller Plaza, New York City

GROVE Pneumatic Gauge COMPARATOR

▲ Mention Item NED-1992 when writing ▲



1 to 2 Seconds for many Silver-Soldered Joints

Widely used for soldering radio parts, cords, telephones, and for other Army and Navy spot heating, this G.C.F. Berwick Soldering Transformer makes *speedy* and *secure* soldered joints. Joints that meet the exacting war requirements for strong, husky work that can meet rough usage.

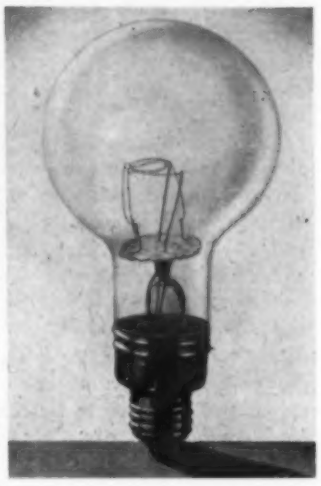
Write us. State your problems, or send samples, and we will try to show you how you will benefit by using the correct type of G.C.F. Soldering Transformer for whatever type solder you use. Available in 43 different sizes, for *resistance* as well as *induction* heating.

In addition to the G.C.F. Berwick Soldering Transformer, G.C.F. Berwick Electric Metal Heaters are available in a wide variety of models, designed to heat anything from a rivet to a 30-foot bar.

AMERICAN CAR AND FOUNDRY COMPANY
30 Church Street, New York, N. Y.
CHICAGO DETROIT ST. LOUIS

▲ Mention Item NED-1993 when writing ▲

INFRA-RED HEAT LAMPS

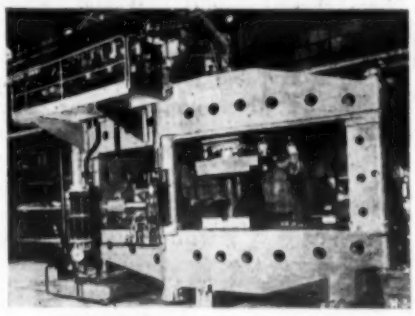


Permanently locking base and bulb against high temperatures encountered in tunnel applications, Superlock construction is claimed to extend life of Birdseye Infra-Red heat lamps. It is stated that previously used method of cementing and strapping bulb to base was not fully serviceable in high temperatures encountered continuously in industrial baking, drying, preheating and dehydrating applications.

Base lining is made with special protrustations fitting tightly into indentations in neck of bulb and locked in position by crimping of metal base. This construction affords permanent seal and locked base which is impervious to heat. Ceramic heat reflector disc replaces mica disc which was used formerly. Made by **Wabash Appliance Corp.**, 332 Carroll St., Brooklyn, N. Y.

▲ Mention Item NED-1994 when writing ▲

HYDRAULIC UPSETTING PRESS



Forming of lightweight tubular railway axles is performed quickly on this hydraulic upsetting press. After one end of seamless steel tubing is heated, it is delivered to press where, by means of external dies and internal mandrel, tube end is upset to desired dimensions. Operation is repeated for other end of axle. Designed for accessibility on all sides, 600/900-ton press has pump and accumulator operating system. Top and bottom castings are supported against each other by distance pieces properly keyed and bolted by means of six preshrunk strain rods.

Press operates on semi-automatic cycle. Twenty-eight-inch diameter clamping ram with 12-inch stroke first clamps tube before guided horizontal ram can start its work stroke. When work stroke is completed, 23 x 22-inch diameter horizontal ram strips from tube before clamp ram pressure is dissipated. Vertical ram has 900-ton capacity and upsetting ram, 600 tons. Resistance post is provided with adequate adjustment.

Air cylinder is arranged to move space block into position when tube is turned around for upsetting second end. To conserve high pressure fluid, auxiliary horizontal ram stripper is used. This acts only to strip mandrel from tube. Stripping force of approximately 175 tons is thus provided for stroke of from zero to 6 inches, after which pull-back force reduces to about 32½ tons.

Reciprocating type power pump provides 3000 pounds per square inch working pressure. Press, pumping and piping system are arranged as complete recirculating unit. Made by **R. D. Wood Co.**, 402 Chestnut St., Philadelphia 5, Pa.

▲ Mention Item NED-1995 when writing ▲

IMMEDIATE SHIPMENT
STEEL BOXES
For Your Production Needs

STYLE 300
STACKING BOX
Just right for your small parts. Light in weight, easy to handle. Equipped with drop handle each end. Runners save wear on bottom of box and act as positive stacking lock.
No. 303 — 9" x 13½" x 4½" — 19 ga. — $ .75 Ea.

STYLE 700
STACKING BOX
A light weight box designed for quick identification of contents. Will stack with No. 303. Finished olive green enamel, baked on.
No. 703-OG — 9" x 13½" x 4½" — 19 ga. — $ .95 Ea.

Prices F.O.B. Factory, Phila.—Any Quantity!
Order Today—Write, Wire or Phone

AMERICAN METAL WORKS, Inc.
1503 GERMANTOWN AVENUE, PHILADELPHIA 22, PA.

▲ Mention Item NED-1996 when writing ▲

NOW "HI-STRESS" Speed Nuts (PATENTED) for HIGH TEMPERATURE APPLICATIONS

in all Structures

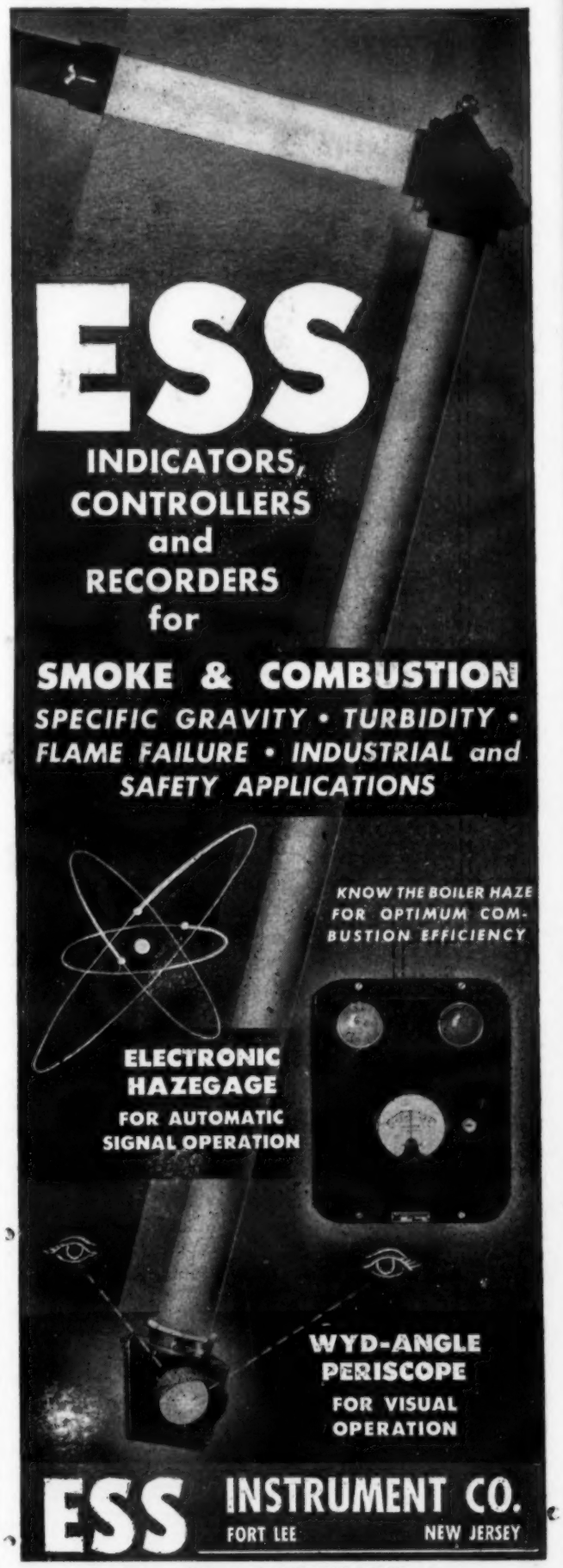
The new "Hi-Stress" SPEED NUT conforms to AAF specification No. 25531 and has been granted engineering approval by the Army Air Forces. It is interchangeable with nut plate AN362, for high temperature applications in all structures.

This new SPEED NUT is a lighter weight, one-piece integral unit. Because of its unusually low installation torque, it allows more rapid insertion of bolts or screws. Even after many removals under service conditions, this new SPEED NUT still retains its self-locking torque. Identify by SPEED NUT No. A6103H-1032.

TINNERMAN PRODUCTS, INC.
3044 FULTON ROAD CLEVELAND 13, OHIO
In Canada: Wallace Barnes Co., Ltd., Hamilton, Ontario
In England: Simmonds Aerocessories, Ltd., London
* TRADE MARK REG. U. S. Patent Office

SPEED NUTS - THE FASTEST THING IN FASTENINGS

▲ Mention Item NED-1997 when writing ▲



▲ Mention Item NED-1998 when writing ▲

★STABILIZED to keep its toughness and transparency. Treated with crystal-clear Albanite, a new K & E synthetic solid, Albanene will not oxidize, become brittle or lose transparency with age. Its improved drawing surface takes ink or pencil freely, erases with ease.

KEUFFEL & ESSER CO. Est. 1867
Chicago • NEW YORK • HOBOKEN, N. J. • Montreal
St. Louis • San Francisco • Los Angeles • Detroit

▲ Mention Item NED-1999 when writing ▲

▲ Mention Item NED-2000 when writing ▲

SOMETHING TO REMEMBER

We know you're up to your neck in winning the war. We are, too. But "tie a string" on your memory and remember this—

Technical Plastics will probably play an important part in competitive manufacturing, and your ability to compete may depend on your knowledge of products like Synthane. So think about it today—and remember for tomorrow.

We have very little spare time for post war thought, but we'll do our best to help you in any way we can. As a self-starter, mail the coupon for the informative Synthane catalog today.

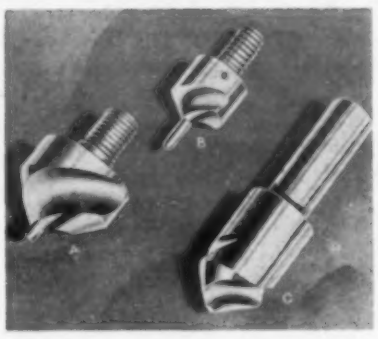
SYNTHANE
TECHNICAL PLASTICS
SHEETS • RODS
TUBES • FABRICATED
PARTS • MOLDED-
LAMINATED • MOLDED-
MACERATED

SYNTHANE CORPORATION,
N. E. River Road, Oaks, Penna.
Please send me a copy of the complete Synthane Plastics Catalog.

Name _____
Title _____
Company Name _____
Address _____
City _____ State _____

▲ Mention Item NED-2001 when writing ▲

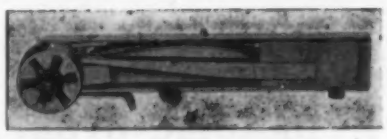
COUNTERSINK CUTTERS



Originally made for Farnham mill countersinkers only, this line of precision countersinking cutters is available for all types of countersinking machines and devices. They are made in wide range of sizes and rivet angles to fit all production requirements with 3/8, 1/2, 5/8, and 13/16-inch body diameters. They are also available with built-in pilot. Interchangeable pilots permit their use for several hole sizes. Special cutters will be made to suit unusual production requirements. Made by Farnham Mfg. Co. Engineered by Paragon Research, Inc., 2059 South Park Ave., Buffalo 20, N. Y.

▲ Mention Item NED-2002 when writing ▲

HOSE CLAMP TORQUE WRENCH



Operating on spring bar deflection principle, this Livermont aircraft hose clamp torque wrench facilitates application of hose clamps. Unless otherwise specified, tool is preset to signal when hose clamps are tightened to recommended torque of 25 inch-pounds. Higher or lower torque settings are available to user's specifications.

Signaling when proper torque is reached is given by audible, high pitched "click" and at same time small plunger taps operator's hand. Visual attention is thus obviated. Torque applied has no variation regardless of where handle is gripped. Tool is particularly useful for tightening high pressure caps on landing gear shock struts and pressure accumulators. Made by Richmont, Inc., 215 W. Seventh St., Los Angeles, Calif.

▲ Mention Item NED-2003 when writing ▲

PUMP STRAINER BASKET

Constructed from heavy gage perforated sheet, this line of strainer baskets includes various opening sizes. They will withstand severe usage and are not easily damaged during cleaning. Net straining area of up to ten times pipe area is possible, exceeding recommendations of Hydraulic Institute by substantial margin.

Spot welding is used to join sheet which is self-supporting, eliminating need for solid frame usually required. Baskets are adaptable for use in all strainers in company's Ezy-Kleen line. Made by Blackmer Pump Co., 1976 Century Ave., Grand Rapids 9, Mich.

▲ Mention Item NED-2004 when writing ▲

LICK YOUR RIVET SALVAGE PROBLEM with CLECO RIV-N-JECTORS

RIV-N-JECTORS consist of a magazine holding about 50 rivets, combined with a mechanism for releasing the rivets one at a time into rivet holes. *They reduce rivet losses 90%*—the operator drops only 2 or 3 out of 50, as compared with a loss of 25 or more when handled by hand. Using the RIV-N-JECTOR, operators often insert and drive 30 rivets per minute.

At left, hopper for filling Riv-n-jectors

Write for 16-page Bulletin 89

THE CLEVELAND PNEUMATIC TOOL CO.
3781 East 77th Street ★ CLEVELAND 5, OHIO
BRANCH OFFICES IN ALL PRINCIPAL CITIES

▲ Mention Item NED-2005 when writing ▲

IMPROVED MODEL McCORD UNIT HEATER

The new improved McCord Unit Heater incorporates every unit heater advancement that McCord engineers and the experience of thousands of users could suggest. The distinctive modern design with rounded corners combines improved appearance with greater strength and houses a heating unit that sets a new standard of heat transfer efficiency and quietness. The scientific design of the individual turbo spiral fin tube core provides even distribution of heated air at high velocity. The individual tubes prevent stresses due to unequal expansion. The entire heating unit is spring suspended and floats free in the casing, eliminating rigid connections. Deep pitched fans provide high air delivery and quietness of operation.

This improved heater is a development of the experience gained from the thousands of McCord Unit Heaters in service. It combines good appearance with that inherent McCord quality of ruggedness and dependability that has made McCord the standard among many of the largest industrial users. You may also replace old leaking heaters using new McCord units and your old fan and motor. Write for new catalogs—Unit heaters and blast coil units. McCord Radiator & Mfg. Co., 2580 E. Grand Blvd., Detroit, Mich. —Advt.

▲ Mention Item NED-2006 when writing ▲

Let This Chair Increase Your Output

Provides Proper Posture for Every Worker, Tall or Short

U. S. Dept. of Labor Bulletin No. 10 reports that proper seating may increase output as much as 32%. Kewaunee Automatic Adjustable Chairs and Stools provide proper seating for any man or woman, tall or short, light or heavy. Seat instantly adjustable up or down without use of tools. Two-way adjustable backrest further minimizes fatigue.

Kewaunee
AUTOMATIC ADJUSTABLE CHAIRS and STOOLS

Sturdily built of selected hardwood with hickory support post. "Ton-tested" for strength, light in weight. Easy to handle. Shaped plywood seat. Used in leading plants from coast to coast

Immediate Shipment

Three standard height ranges carried in stock . . . 18-22", 22-28", 28-36". Other height ranges obtainable. Wire or write for sample on approval. Specify height range wanted. Descriptive literature on request.

C. G. Campbell, Pres.

Instantly Adjustable
Just lift the seat—that's all. A big advantage in three-shift schedules.

KEWAUNEE MFG. CO., ADRIAN, MICH.

▲ Mention Item NED-2007 when writing ▲

Keep Scrap off the Floor
Make it Easier to Handle—
Save Valuable Materials with
LITTELL SCRAP WINDERS

No. 3G and 5G LITTELL Patented Motor-Driven Scrap Winder and Automatic Centering Reel. Capacities, 300 and 600 lbs.

SAVE scrap, prevent waste, and keep floors clean for faster, safer production—with Littell SCRAP WINDER shown. It is readily convertible into an Automatic Centering Reel by changing direction of motor.

As an Automatic Reel this unit is ideal for handling heavier types of coils and for feeding at higher speeds. Motor-driven, ball-bearing, with adjustable arms and stock control.

Besides Reels, Winders and Cradles, LITTELL makes Roll and Dial Feeds, Straightening Machines, Air Blast Valves and Nozzles, Pres-Vac Safety Feeders and Mechanical Pickers, Scrap Cutters, etc.

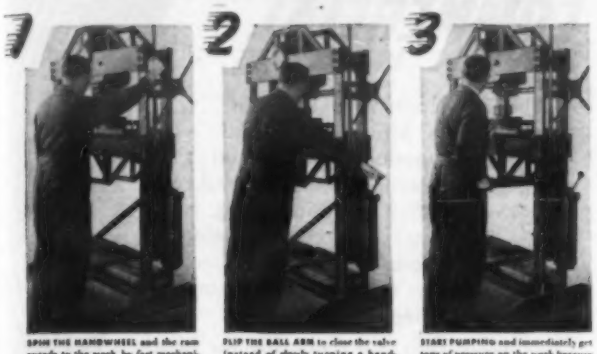
ASK FOR BULLETINS

SPEED WITH SAFETY

F.J. LITTELL MACHINE CO.
4161 RAVENSWOOD AVE., CHICAGO, ILL.

▲ Mention Item NED-2008 when writing ▲

SPEED



1 SPIN THE HANDWHEEL and the ram speeds to the work by fast mechanical action instead of slow, laborious hydraulic pumping.

2 FLIP THE BALL ARM to close the valve instead of slowly turning a handwheel type control.

3 START PUMPING and immediately get tons of pressure on the work because the hydraulic cylinder was automatically filled with oil during oper. No. 1.

3 QUICK MOTIONS OPERATE KRW HYDRAULIC PRESSES!

SPEED is the basic design feature of KRW Hydraulic Arbor Presses—*they are faster than most power-operated presses.* In operation, you get *speed* in bringing the ram to the work . . . *speed* in developing hydraulic pressure . . . *speed* in raising the ram to remove the work. These KRW features have sold thousands of our hydraulic presses to industry where they are doing work formerly considered only possible on larger, heavier and more costly equipment. Ingenious adaptations of KRW presses have been built to handle many kinds, sizes and types of material. All, of course, incorporate the KRW principle of SPEED in operation. Write for our new bulletin describing KRW Hydraulic Presses in 25, 50, 60 and 75-ton capacities.

IMMEDIATE DELIVERY on AA-4 Priority or better

K. R. WILSON
10 LOCK ST., BUFFALO 2, N. Y.

▲ Mention Item NED-2009 when writing ▲

. . . JUST TRY 1

MOCCASIN BUSHING

on your most **TROUBLESOME BEARING**

The success of Moccasin Bushings' efficiency lies in their unique lubrication principle. Oil is drawn from a reservoir in the bearing housing and is distributed by capillary action in a continuous, unbroken film over the entire bearing surface. Drippage and seepage of oil is entirely eliminated, and under ordinary circumstances they require attention only two to four times a year—just try one on your most troublesome bearing. Guaranteed for satisfactory service.

Moccasin
BUSHING COMPANY
CHATTANOOGA, TENNESSEE

▲ Mention Item NED-2010 when writing ▲

LIMA GEARSHIFT DRIVES
for Machine Tools requiring
selective speeds . . . 1 to 25 hp.

Large Enough To Successfully Serve You, Yet Small Enough To Give Personal Attention To Your Needs.

THE LIMA ELECTRIC MOTOR CO.
379 FINDLAY ROAD
LIMA, OHIO
REPRESENTATION IN MOST PRINCIPAL CITIES
LIMA GEARSHIFT DRIVES - LIMA ELECTRIC MOTORS
LIMA MAGNETIC POLISHING LATHES - LIMA PEDESTAL GRINDERS

▲ Mention Item NED-2011 when writing ▲

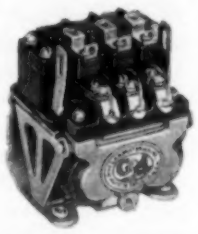
LATCHING CLAMP

Combining snap-on latch with full adjustment feature of standard clamp in single unit, this Quick-Coupler clamp may be installed or removed quickly. It is particularly suited for handling removable equipment such as oxygen containers, fire extinguishers, duct sections and similar services. It is available in all sizes, in aluminum alloy and stainless steel, as well as in shapes to fit all convex surfaces. It may be fitted with self-locking, plain hex or wing nuts. Design permits application of uniform radial pressure to periphery of parts over which it is installed. Rugged construction permits repeated use without loss of efficiency. Made by **Marman Products Co.**, Dept. NED, 940 W. Redondo Blvd., Inglewood, Calif.

▲ Mention Item NED-2012 when writing ▲

ELECTRONIC CIRCUIT RELAY

Small in size and having high contact capacity, type 27 relays are designed for electronic circuits requiring multipole units. Each blade is permanently adjusted by means of shimming.



Relays are available for up to five contacts and weigh from 4½ to 6½ ounces. They withstand vibration and acceleration of 10 times gravity. Contact capacity is up to 10 amperes, depending upon available power and on coil and circuit characteristics. Contact pressure is 30 to 50 grams. They will meet temperature, humidity, elevation and salt spray tests to usual aircraft specifications. Wide variety of contact forms and coil resistances can be supplied to meet user's requirements. Made by **G-M Laboratories, Inc.**, 4316 N. Knox Ave., Chicago, Ill.

▲ Mention Item NED-2013 when writing ▲

SAFETY BRASSIERE

Marketed under trade name of Brest-Gard, this safety device has been developed to be worn by women in industry for protection from accidental blows or pressure. Shaped to fit contours of body, unit is comfortable protective shield of heavy 0.040 gage cellulose acetate plastic. Though light in weight, it offers sufficient strength to ward off bumps or blows.

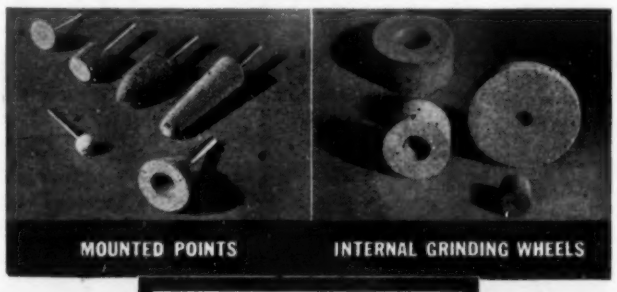
It is available in large, medium and small bust sizes. It may be worn under work clothing and is inconspicuous. Inner surface and edges are lined with replaceable, washable silk jersey and ample ventilation is provided. Made by **B. F. McDonald Co.**, 1248-B S. Hope St., Los Angeles 15, Calif.

▲ Mention Item NED-2014 when writing ▲

"GUESS GRINDING" IS OUT

THERE's no "guessing" when you buy Radiac. Radiac Prescription Fitting means that every Radiac Mounted Point or Wheel is prescribed and custom-compounded exactly to suit your job. Then your "prescription" is kept on file so reorders can be accurately and quickly duplicated. When you buy Radiac you get the *right* wheel every time. All mounted points and wheels are 100% tested—the products of pioneers in the industry. For better results—use Radiac!

A. P. DE SANNO & SON, INC., 446 Wheatland St., Phoenixville, Pa.
SINCE 1893
New York • Chicago • Pittsburgh • Cleveland • Detroit • Los Angeles



MOUNTED POINTS INTERNAL GRINDING WHEELS

*T. M. Reg. U. S. Pat. Off.

RADIAC

Copyright, 1944, A. P. de Sanno & Son, Inc.

▲ Mention Item NED-2015 when writing ▲

It Pays to Plan Ahead For WIRE ROPE SLINGS

Help us to meet your delivery requirements—anticipate your needs *now*. Macwhyte Wire Rope Slings are in greater demand than ever to help speed vital materials of war safely along production lines . . . materials like engines, castings, tanks and tank parts, guns, motors, propellers, machinery, etc.

Further, since these better-made slings are constructed of critical wire rope and fittings, they are themselves critical material.

Help Us to Help You

Let us know in advance what your requirements will be. Our sling engineers will suggest the best slings available for your job, and tell you how to get the most service from these slings.

Of this you can be sure: though we may not always be able to keep up with the quantity of slings ordered, we *will* always keep the *quality* of Macwhyte Wire Rope Slings at that high level that has made them famous.

MACWHYTE COMPANY
2932 Fourteenth Ave., Kenosha, Wisconsin

Let's *all* back the attack —buy *another* War Bond!

ARMY E NAVY

No. 727-8

▲ Mention Item NED-2016 when writing ▲

PRODUCT OF THE MONTH

MILWAUKEE, WIS.—Allis-Chalmers announces the new Ampac "400" a-c welder . . . engineered and built during the war to meet 24-hour-day requirements. It employs the simplest possible construction of a continuously variable welder—is exceptionally efficient and rugged. B-6302.

ALLIS-CHALMERS·MILWAUKEE·WIS.
A 1670

▲ Mention Item NED-2017 when writing ▲

Your SAWS are no better than your SAW FILING

Inaccurate saw filing can ruin the cutting efficiency of the best saws, perhaps crack or break them. The machine precision of Foley Saw Filing can increase your sawing output 25% to 40%. The Foley *automatically* joints the saw as it is filed, making all teeth uniform in size, height, spacing. Foley-filed saws run cooler, cut fast, do beautiful work—and stay sharp longer.

30-DAY TRIAL of the Foley Saw Filer is offered—to show you what a difference Foley-filed saws can make.

FOLEY *Automatic* SAW FILER

FOLEY MFG. CO., 23 2nd St. N. E., Minneapolis 13, Minn.
Please send literature on the Foley Automatic Saw Filer and details of your 30-Day Trial.

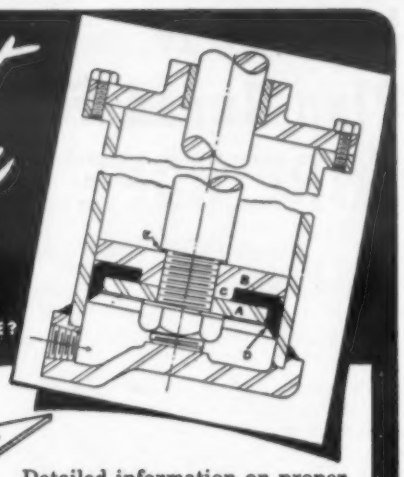
*Name*_____

*Address*_____

▲ Mention Item NED-2018 when writing ▲

What Design

FOR CUP, BACKING PLATE, FOLLOWER PLATE?



Detailed information on proper design and application of various packings types. ... is given in a series of Packings Pointers published by Graton & Knight engineers. Free folders on cups, U's, Vees and flanges are now ready. Write Dept. G.

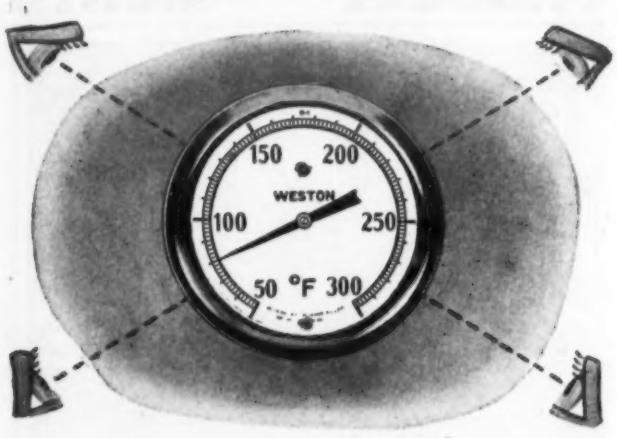
And for the industry's top-quality leather packings, specify SPARTAN — highest resistance to heat and chemicals; mellow and flexible, yet firm; unaffected by wetting and drying. SPARTAN is Graton & Knight's exclusive, special tannage for long-life, trouble-free packings.

GRATON & KNIGHT COMPANY

WORCESTER 4 GRATON AND KNIGHT MASSACHUSETTS

▲ Mention Item NED-2019 when writing ▲

The "eyes" have it . . .



The WESTON gauge-type thermometer is *far more readable*. But the big point is that *seein's believin'* whenever you read a WESTON. Because its high initial accuracy (1% over the entire scale) is maintained over long periods of time. The reason is . . . even the temperature element in the WESTON is all-metal! There is no gas, no liquids, no fragile parts. Thus it can withstand vibration or other mechanical abuse without damage or without affecting its accuracy. It's easier to install, too, and no corrections are necessary for capillary or elevation.

Booklet describing these rugged and dependable thermometers, including types, stem lengths, prices, etc., gladly sent on request. Weston Electrical Instrument Corporation, 663 Frelinghuysen Ave., Newark 5, N. J.

WESTON *All-Metal* TEMPERATURE GAUGES

▲ Mention Item NED-2020 when writing ▲

CANNON ELECTRIC *Shallow Mounting* LAMP SOCKETS

PANEL MOUNTING TYPE DCF

Cannon Shallow Mounting Lamp Sockets are used for single and double contact bayonet type lamps. Available with following terminal connections. Solder terminal, bridge for screw terminals, screw terminal not bridged, screw terminal in front of socket phenolic. . . . Cannon quality throughout.

Write for Data Sheet on Cannon Shallow Mounting Lamp Sockets. Address Department A-113, Cannon Electric Development Co., 3209 Humboldt Street, Los Angeles 31, Calif.

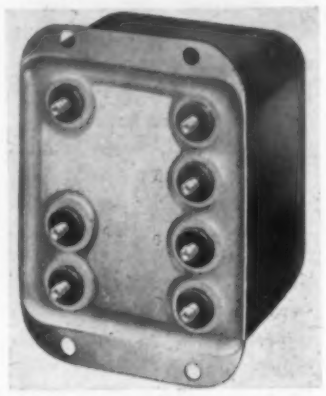
CANNON ELECTRIC

Cannon Electric Development Co., Los Angeles 31, Calif.

Canadian Factory and Engineering Office: Cannon Electric Company, Ltd., Toronto, Canada

▲ Mention Item NED-2021 when writing ▲

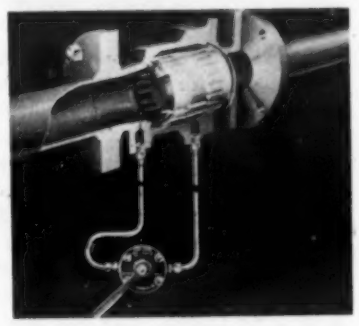
SEALED TRANSFORMER



Designed for use on all types of equipment in all theaters of war operation, this type S transformer is hermetically sealed. Recently approved by U. S. Navy, it has cold-drawn copper-cadmium plated steel case. Terminal is molded into plastic block having metal flange molded into its periphery. This flange is soldered into case. Vac-sealing impregnation process is used and is claimed to insure absolute impregnation without solvents or other deleterious material being present inside coil. Made by **Peerless Electrical Products Co.**, Dept. NED, 6920 McKinley Ave., Los Angeles 1, Calif.

▲ Mention Item NED-2022 when writing ▲

REMOTE CONTROL VALVE



Representing radical departure from conventional design, this Flexflo remote control valve is intended for cold fluid service such as water, salt water, chemical solutions, oil, gases and air. Identified as "expansible tube type," it operates by manual or automatic remote control on hydraulic principle of balanced and unbalanced fluid line pressure. Because construction incorporates only one non-metallic operating part, valves are resistant to corrosion and erosion, as well as to electrolytic action. They are self-compensating for wear and capacity is claimed to be considerably greater than that of globe type valve on same pressure drop or loss.

Assembly consists of body, flange head, slotted pipe-like core with solid barrier in center and cylindrical flexible tube. This resilient tube is stretched tightly over core. Both tube and core slip into valve body as unit and are held firmly in place by bolted flange head. Flanged ends of tube serve as leakproof gasket, sealing off encircling pressure chamber from fluid stream. Existing fluid pressure forces tube to fully expand against inner wall surface of encasing valve body, thereby opening valve and permitting constantly smooth non-turbulent flow. This occurs when remote control valve is closed.

By opening small remote control valve, line pressure is diverted into actuating chamber to establish pressure balance on inner and outer walls of expansible tube. Tube flexes closed over surface of core. Static line pressure then maintains positive bubble-tight air-tight shut-off of valve indefinitely. Valve cannot stick or "freeze".

But little head room is required for installation. Several valves can be controlled from central remote control station. Valves may be operated hydraulically or pneumatically by various systems such as manual, electro-solenoid, mechanical or automatic remote control. Made by **Grove Regulator Co.**, 6533 Green St., Oakland 8, Calif.

▲ Mention Item NED-2023 when writing ▲

New "Wood" Locker Unit accommodates 12 in 5 feet

The new hardwood and plywood Peterson Industrial Lockers come in both single and double (back to back) units that accommodate either 12 or 24 persons in every 5 running feet. Double locker room capacity and save valuable floor space for productive use. Provide each employee with a spaced coat hanger, an individual ventilated hat shelf and a 12 in. x 12 in. lock box for lunch, micrometers, drawing instruments or personal effects.

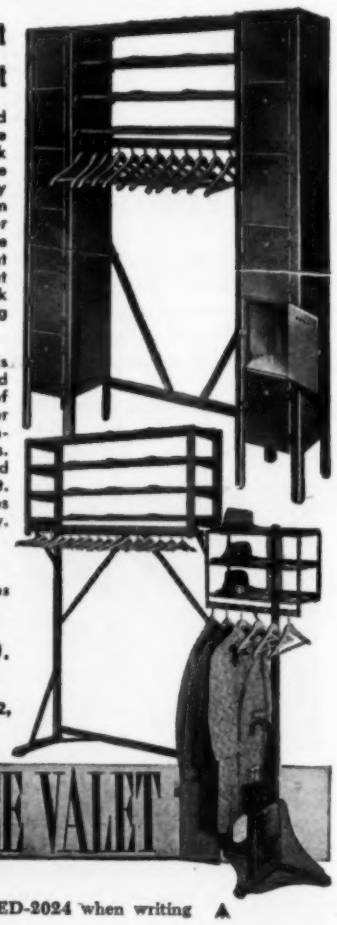
PETERSON Wardrobe Equipment is provided for factory, shop and office—comprises a complete line of single and double faced locker units, wardrobe racks and non-tipping (6 or 12 place) costumers. Keep wraps "in press", dry and sanitary—exposed to air and light. No crumpled hats or soggy lunches in stormy weather. Prompt delivery.

Write for Catalog and Dealer Propositions

VOGEL-PETERSON CO.

"The Checkroom People"

1803 N. Wolcott Ave., Chicago 22, U. S. A.



The OFFICE VALET

▲ Mention Item NED-2024 when writing ▲

COMMERCIAL TANK HEADS

The cold forming of steel in solid dies produces a head that is superior to one formed hot, or bumped out by hand or mechanical hammering. "Commercial" cold forming maintains accurate dimensions whether "One or A Carload" is made.

Dies are available for heads or circular shapes in diameters from 6" to 60" and in various styles and depth of flange.

We have two booklets—Shape Book #5 and "Price List" that should be in all buyers files.

FREE for Asking.

The COMMERCIAL SHEARING AND STAMPING CO.

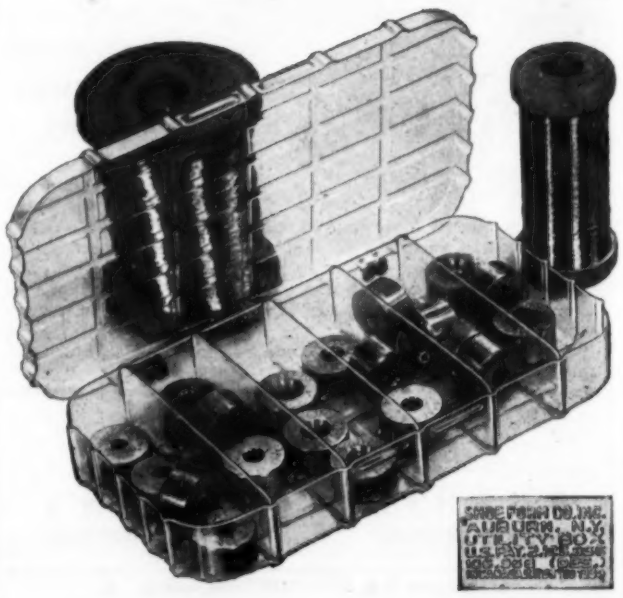
YOUNGSTOWN 1, OHIO

▲ Mention Item NED-2025 when writing ▲

Pyra-Shell

Reg. U.S. Pat. Off.

TRANSPARENT UTILITY BOXES



Stock room storage of important small parts — like the dies for drawing wire shown above — is speeded up and simplified when Pyra-Shell Patented Transparent Utility Boxes are used. While these parts are fully protected against dirt, dust and destructive grit — they are visible at all times, preventing delay in locating any one part instantly.

Pyra-Shell boxes are light in weight but their special patented construction makes them exceptionally sturdy and strong. They are available in a wide variety of standard sizes and compartment arrangements. If one of these standard styles will not meet your particular needs, a special size, style or compartment arrangement can be designed for your particular use.

Write for folder illustrating standard styles. Address— Utility Box Dept. D

SHOE FORM CO. INC.

AUBURN, N. Y.

▲ Mention Item NED-2026 when writing ▲

DECORA JIFFY SWIVEL COUPLER

{Shown at left:}
Female plug and female body. Available also in male. In ordering designate which you require.

Plug and Body . . . complete $1.00
(Extra plugs . . . each .25)

Wherever air hoses supply air tools the useful Decora Swivel Coupler will save time and bother. The change from one tool to another is easy, sure and quick. Automatic valve makes air instantly available when the plug is seated, stops the flow when the plug is removed. Swivel action avoids hose kinks and snarls on long lengths. Standard pipe thread used. Oil resistant valve ring replaceable with Schrader chuck washers, obtainable everywhere. Available in 1/4" size only. *Send for new catalog sheet* with complete information on couplers, blow guns, hose fittings and engine cleaners. Available from stock on AA priorities.

(Distributorships open in several areas)

See your DECORA Dealer or write

DECORA MANUFACTURING CO., INC.
Factory Office: 1819 FIFTH STREET, BERKELEY 2, CALIFORNIA

Chicago Distributor:
W. I. Martin & Co., 711 S. Dearborn St.

▲ Mention Item NED-2027 when writing ▲

with DAYTON ROGERS LAYOUT FLUID

If you have sample parts or periodic piece inspection on production runs to check for accuracy, do it faster and better with this deep Die Blue Layout Fluid.

It dries as you brush it on. Your scribed check lines show clearly—no eyestrain. Also widely used for original layout work on steel, brass, aluminum, stainless steel, tin, copper by tool and die makers, machinists, model-makers and others.

PRICES—Handy 4 oz. Brush-in-Can, 40c. Pint, 60c. Quart, 90c. Gallon, $2.50. Circular on request.

DAYTON ROGERS MANUFACTURING CO.
2837 12th Ave. South
MINNEAPOLIS 7, MINN.

▲ Mention Item NED-2028 when writing ▲

INDUSTRIAL GEAR MFG. CO.
4541 VAN BUREN STREET CHICAGO 24, ILLINOIS

▲ Mention Item NED-2029 when writing ▲

MACHINE TOOL ATTACHMENTS

Increasing greatly range of work which can be handled on Wickman No. 2 Swiss type automatic machine, this group of attachments includes three-spindle unit for multiple operations and separate units for high speed drilling, threading, slotting and taper pin turning. Attachments can be used interchangeably and any set-up man can make change with ease.

Three-spindle attachment mounted on machine may be used for centering, drilling, reaming, threading or tapping. Indexing is controlled by two plate type cams and feeds are controlled by sleeve type cam. No. 1 spindle is non-rotating and is used for centering and drilling. No. 2 spindle may either rotate in opposite direction from machine spindle or be held stationary. No. 3 spindle over-runs machine spindle for precision threading, but it can also be held stationary for drilling and reaming.

Drilling attachment consists of sliding head rotating in direction opposite from that of machine spindle and feed is controlled by drum type cam. Threading attachment consists of hollow spindle with sliding head which over-runs machine spindle. It uses self-opening die heads and coolant is supplied to cutting tools by hollow spindle.

Slotting attachment is used to slot or mill any part produced on machine. Extremely long, accurate tapers are transferred from ground form bar directly to No. 1 tool by taper attachment. Made by **The Wickman Corp.**, 15535 Woodrow Wilson Ave., Detroit 3, Mich.

▲ Mention Item NED-2030 when writing ▲

PRECISION WHEEL DRESSER

Of improved design, model E radii and angle dresser for precision forming of abrasive wheels may be used to obtain any one angle, any two angles, convex radii or concave radii. Features include ½-carat 60-degree tapered concentric diamond, permanent micrometer size block, traverse control handle, micrometer pins for setting radii, swivel base stops for setting angles, vernier platen, graduated swivel base and stop rings.

Also available is attachment for forming 180-degree U-shaped concave radii with minimum radius of 1/16 inch. Accuracy within tolerance of 0.0001 inch is possible with this tool which operates on "fluid motion" principle. Only one setting is required per form and wheels up to 14 inches in diameter may be dressed. Capacity ranges from 0 to 3 inches concave and to 3 inches convex. All moving parts are fully shielded from entry of dirt. Tool may be used with practically all surface and cylindrical grinders. Made by **J & S Tool Co.**, 477 A Main St., East Orange, N. J.

▲ Mention Item NED-2031 when writing ▲

SPRACO NOZZLES

For industrial processes involving washing, cooling, spraying, scrubbing, and quenching, Spraco Nozzles are available in a complete range of types, sizes, and capacities. Standard materials are cast iron, brass, and bronze, but nozzles for use with corrosive liquids and gases can be supplied from any machinable alloy (with suitable priorities).

Write to

SPRAY ENGINEERING CO.
106 Central Street, Somerville, Mass.

▲ Mention Item NED-2032 when writing ▲

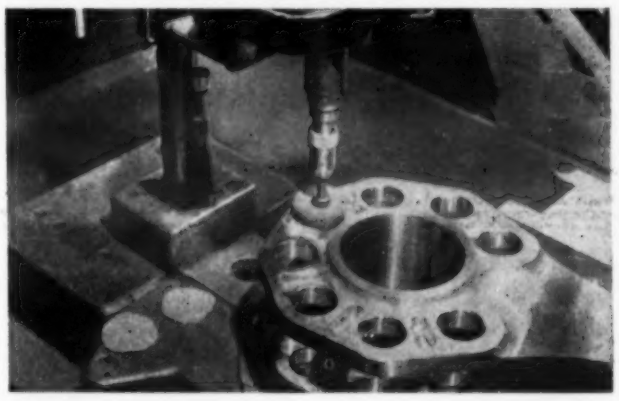
New Edition!
SEND FOR YOUR FREE COPY OF THIS
ELECTRICAL CONTROL DEVICES CATALOG
12-24 VOLTS D.C.

Builders of aircraft, tanks, boats, trucks and most types of portable or mobile equipment—get your copy of this latest edition of the Square D *Air-Line*. It covers a wide variety of lightweight, compact devices, designed to operate efficiently under these conditions: Acceleration of 10 G's. Vibration up to 55 c.p.s. at 1/16" excursion. Altitudes up to 40,000 feet. Temperatures from −65° F. to +160° F. (Circuit breakers, −50° F. to +135° F.)

MANUALLY OPERATED SWITCHES ★ MAGNETIC CONTACTORS AND RELAYS ★ SNAP-ACTION PUSH BUTTONS ★ CIRCUIT BREAKERS

ELECTRICAL EQUIPMENT · KOLLSMAN AIRCRAFT INSTRUMENTS
SQUARE D COMPANY
DETROIT · MILWAUKEE · LOS ANGELES

▲ Mention Item NED-2033 when writing ▲



Right at the edge of a job well done!

Use of Abrasive Cloth Slotted Discs made by Carborundum has resulted in amazing simplification of deburring and polishing operations on holes from 3/8" to 5 1/2" in diameter. Discs, proportionately larger than the holes they are designed to deburr and polish, are attached to power driven spindles. Pressed against the work, the discs cone, and give a true radius to the edges of the holes without touching the sides. It's a fine example of choosing the right abrasive product for the job. The Carborundum Company, Niagara Falls, N. Y.

CARBORUNDUM
ABRASIVE PRODUCTS

Coated Abrasives by **CARBORUNDUM**

Sales Offices and Warehouses in New York, Chicago, Philadelphia, Detroit, Cleveland, Boston, Pittsburgh, Cincinnati, Grand Rapids
(Carborundum is a registered trade mark of and indicates manufacture by The Carborundum Company)

▲ Mention Item NED-2034 when writing ▲

New OXWELD MP-10

25-lb. Carbide Capacity Portable Acetylene Generator

Weight—116 lb. empty—350 lb. charged
Height—4 ft. 2½ in.
Available through all jobbers of Prest-O-Weld and Purox apparatus.
Price $106

The 25-lb. Oxweld generator uses 14ND Union Carbide and produces as much as 50 cu. ft. of acetylene per hour. This medium-pressure generator is fully equipped, including a built-in pressure-regulating device, two relief valves, a hydraulic back-pressure valve, and an interference mechanism. It is easy to charge and simple to maintain. The MP-10 is also available in a 15-lb. size. Write for a descriptive folder.

THE LINDE AIR PRODUCTS COMPANY
Unit of Union Carbide and Carbon Corporation
30 E. 42nd Street UCC New York 17, N. Y.
In Canada: Dominion Oxygen Company, Ltd., Toronto

"Oxweld" and "Union" are registered trade-marks.

▲ Mention Item NED-2035 when writing ▲

SARCO SARCO COMPANY, INC. 475 Fifth Avenue, New York 17, N. Y.
SAVES STEAM SARCO CANADA, LTD., 85 Richmond St. W., TORONTO, ONT.

▲ Mention Item NED-2039 when writing ▲

The right tool, in useful shapes, for assembly work, soft metal forming, motor winding, and other "ticklish" jobs. Replaceable tips are "tough but gentle" Stanloid—made for long service—with comfortable hickory grips securely wedged in.

Stanley Tools, 135 Elm Street
New Britain Connecticut

• • •

27 complete lines of tools clearly indexed for quick reference. Write for a copy of Stanley Industrial Tool Catalog No. 50.

STANLEY

THE TOOL BOX OF THE WORLD

▲ Mention Item NED-2040 when writing ▲

▲ Mention Item NED-2041 when writing ▲

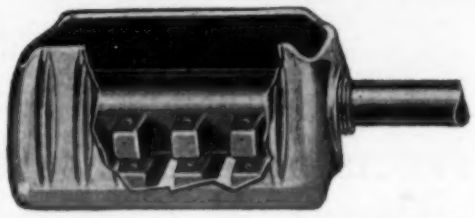
PORTABLE VIBRATING TOOL

Improvement in design of this Vibro-Tool is weighted grip which enables operator to handle it more easily and thus speed up his job. Because of new grip, deeper penetration can be made into hard materials and excessive recoil is eliminated. Hand fits naturally around grip and perfect balance is assured. Tool, with ball grip, is especially adaptable for operations where it is necessary to "bear down" on tool for such uses as gouging, cutting into heavy rubber or making deep markings on metal. Made by **Burgess Battery Co., Handicraft Div.**, 180 N. Wabash Ave., Chicago, Ill.

▲ Mention Item NED-2042 when writing ▲

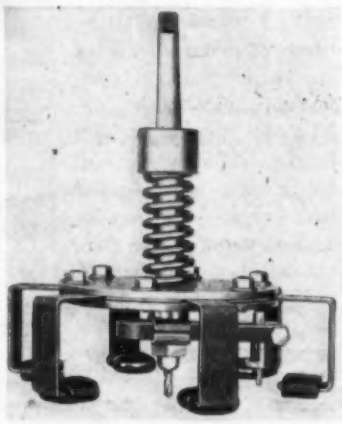
MULTIPLE GAS BURNER

Usable individually for small heating requirements or in series of up to twelve units, this Little Gem gas burner provides automatic mixing of gas, thus eliminating need for premixing. It is particularly suited for heating bake ovens, small boilers, core ovens, drying ovens, galvanizing tanks, plating tanks, wax heaters, vulcanizers and other units. Made by **Columbia Burner Co.**, Dept. 12A, Toledo, O.



▲ Mention Item NED-2043 when writing ▲

CIRCLE CUTTING TOOL



When inserted in drill press, this tool cuts circular holes ranging from 1½ to 8 inches in diameter in metal, plastics, wood and similar materials without use of clamps. Adjustable legs forced downward by spring pressure hold material close to cutting circumference. This prevents distortion or bulging of thin sheets.

Heavy U-beam slides between two channel type washers which prevent disturbing of setting when nut is tightened. Heavy ball thrust bearing carries spring load. Cutting tool alone, without clamping fixture, is also available. Made by **Corlin Mfg. Co.**, Dept. N, 3201 Clinton Ave., Minneapolis 8, Minn.

▲ Mention Item NED-2044 when writing ▲

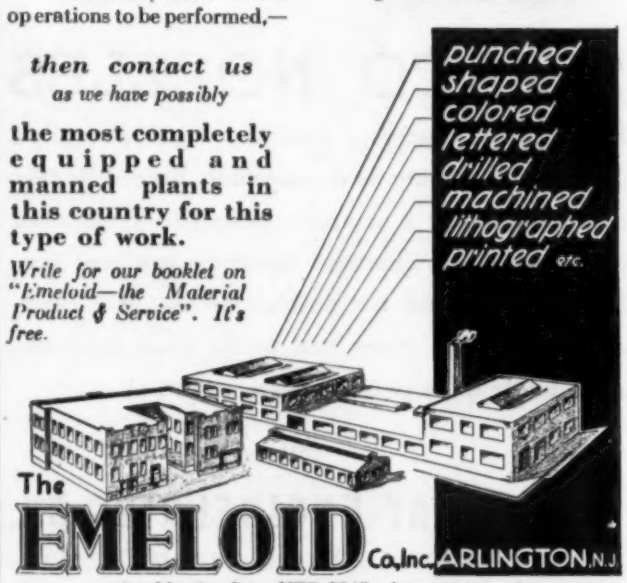
EMELOID PLASTICS if you seek perfection in plastic fabrication

irrespective of the operations to be performed,—

then contact us
as we have possibly

the most completely equipped and manned plants in this country for this type of work.

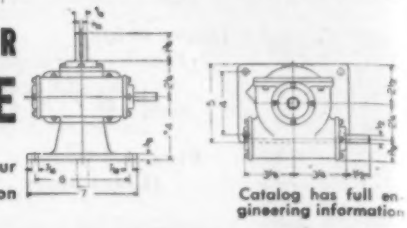
Write for our booklet on "Emeloid—the Material Product & Service". It's free.



The EMELOID Co., Inc. ARLINGTON, N.J.

▲ Mention Item NED-2045 when writing ▲

LET Abart DO YOUR FIGURING
SAVE YOUR OWN TIME



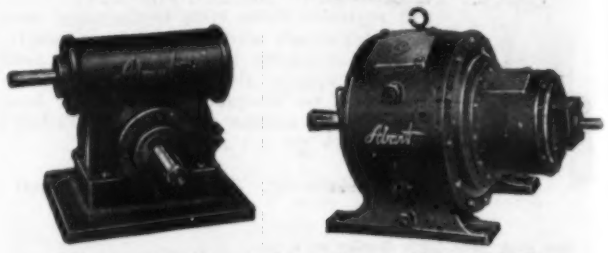
Expert data to fit your needs quickly supplied on

Catalog has full engineering information

Abart Speed Reducers

Applications, drawings, tables, worm, spur, combinations, drives, ratios, horsepowers—everything promptly laid before you.

Horizontal and Vertical Duties, 1/50 to 400 h.p.



Tell us your requirements. Let us show you Abart superiorities.
Abart Gears cut to specifications. No stocks. Send B/P for estimate.

Abart GEAR AND MACHINE CO. MANUFACTURERS OF Speed Reducers & Gears 4822 WEST 16th ST., CHICAGO 50, ILLINOIS

▲ Mention Item NED-2046 when writing ▲

NEW LINCOLN WELDER for field duty

THE NEW 200-AMP. ENGINE-DRIVEN "SHIELD-ARC"

"Job Selector" varies speed of engine for welding duty and thus gives accurate control of open circuit voltage, affording improved welding control and minimizing fuel consumption. It also permits idling of engine for greater economy.

Powered by heavy-duty, 4-cylinder engine, 29 H. P. at 1400 R. P. M.

Supplied complete with base and canopy. Running gear for easy portability optional extra equipment.

Full details in Bul. 312-C, free on request.

THE LINCOLN ELECTRIC COMPANY • Cleveland 1, Ohio
Largest Manufacturers of Arc Welding Equipment in the World

▲ Mention Item NED-2047 when writing ▲

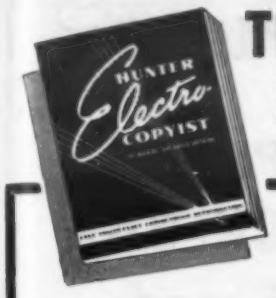
The operator of this "HydrOILic" can handle one-of-a-kind straightening jobs rapidly, controlling pressure "as he goes"—*inch-by-inch* and *pound-by-pound!* Or, for volume production work, pressure and ram stroke limits may be *pre-set* at any point! No wonder it's called a "micrometer with a 300,000 pound squeeze!" Speed of stroke can also be varied. Easily adaptable for bending, assembling and other jobs, too. The flexible, *fluid* power and control of this 150 ton DLSC2 is typical of all Denison HydrOILic presses. Write for details.

The Denison Engineering Company, 1151 Dublin Road, Columbus 16, Ohio.

INDUSTRY'S NEW RIGHT HAND FOR PRESSING
DENISON EQUIPMENT in APPLIED HydrOILics

▲ Mention Item NED-2048 when writing ▲

New Life for Work-Swamped Drafting Rooms



This BOOKLET

Explains—the modern easy way to do hard reproduction jobs

By HUNTER Electro-Copyist

● Perfect machine-made tracings in minutes instead of hours . . . clear prints direct from pencil originals . . . costly checking or proof-reading eliminated . . . old or wrinkled tracings and drawings renewed . . . black or colored material, one-sided or double-sided data, reproduced in size-for-size, error-proof, change-proof copies . . . inexpensively . . . by your regular office help . . . with unmatched speed.

● If you are in the midst of reconversion problems, the Hunter Electro-Copyist can help you make short work of floor plans, machinery location layouts, etc. Send today for our booklet!

Hunter Electro-Copyist, Inc.
433 S. Warren St., Syracuse 2, N.Y.

▲ Mention Item NED-2049 when writing ▲

CLEANLINESS is of prime importance in the prevention of skin diseases. Indeed, some authorities state that 90% of all occupational skin diseases could be prevented by proper personal cleansing methods. It is those workers who handle chemicals and other materials which are difficult to remove at wash-up time who are the ones most subject to occupational dermatitis. The use of harsh, strongly alkaline or abrasive cleaners containing grit and sand or the habit of using solvents and bleachers by such workers in order to remove this tenacious soil is often the cause of dermatitis. West calls this *"Soapotage" . . . and recommends Lan-O-Kleen as the answer.

LAN-O-KLEEN* is a powdered soap of *mildly* alkaline reaction compounded with granular corn-meal which has been impregnated (by an exclusive process) with anhydrous lanolin. In its use, the lanolin in Lan-O-Kleen buffers the alkaline reaction of the soap, protecting the natural oil film of the skin and leaving the hands ready for top-speed war production.

It removes 95% of all soils encountered in industry without injuring the skin and leaves hands feeling better, more ready for work and helps prevent many causes of occupational dermatitis.

● *Send for your copy of this booklet.*

* Reg. U. S. pat. off.

WEST DISINFECTING Company
42-16 WEST STREET • LONG ISLAND CITY 1 • N. Y. • DEPT. DE

▲ Mention Item NED-2050 when writing ▲

PLASTIC SAFETY GOGGLE

Featuring all-plastic design and one-piece lens of shatter-proof methacrylate which withstands heavy impact, model 7 Eye Saver industrial safety goggles are light in weight and comfortable to wear. Curved plastic frame fits face snugly and shields eyes from all angles. Low cost lenses are readily replaceable. They are non-fogging and special styles are available for wearing over prescription glasses. Made by Watchemoket Optical Co., Providence 3, R. I.

▲ Mention Item NED-2051 when writing ▲

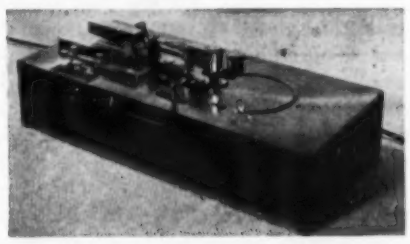
STOKER TIMER RELAY

Utilizing thermal action principle, this Thermo-Pilot replaces conventional clock timing mechanisms with two simple moving units for primary stoker control. Positive and dependable in action, this unit employs electric current to supply heat energy for bimetal element. When sufficient heat has been stored in bimetal element, circuit is closed to energize stoker relay and start stoker. As bimetal element cools, relay pilot is deenergized, stoker stops and cycle is repeated.

This hold-fire operation can be adjusted for short, medium or long operating periods of from ½ to 1 hour intervals to meet most operating requirements. Safety switch prevents hold-fire operation immediately after stoker has been placed in operation by regular thermostat. This eliminates overshooting of room thermostats. Made by Perfex Corp., Dept. 12, 500 W. Oklahoma Ave., Milwaukee, Wis.

▲ Mention Item NED-2052 when writing ▲

RING TESTING FIXTURE



Surface roughness of piston rings may be measured easily through use of this type R piloting fixture which is used in conjunction with any Profilometer. Ring may be measured by tracing circumferentially, by tracing radially at any one place on ring and by combination of both methods at same time. Operation is fully automatic, with switches for selecting type of stroke desired. Automatic shut-off stops rotating of ring as diamond point approaches gap where damage might occur.

Fixture is designed for production checking of piston rings. Tracer is advanced auotmatically and retracted for each ring. Rings may be inserted easily, and adjustments are simple for rings varying from 2 to 10 inches in inside diameter. Unit may be used for keystone rings also. Equipment operates from any 110-120-volt 60-cycle alternating current source. Made by Physicists Research Co., Dept. 20, 343 S. Main St., Ann Arbor, Mich.

▲ Mention Item NED-2053 when writing ▲

SQUARE TRUNNION BOX *and* TRUNNION BOX TRUCK

Used for transporting work in process, between operations or for hauling stock to storage; will handle all types of material including hot parts or liquids. One truck serves any number of boxes.

Boxes made of 12 gauge steel plate, with steel plate reinforcing at trunnion. All welded construction and water tight. Measure 18" by 18" by 24" high. Top edge formed for reinforcement. Weight 80 lbs.

Trunnion box truck is built of heavy bar stock, well reinforced, tubular handles, welded construction. Two 10" x 2½", roller bearing, metal wheels. Weight 100 lbs. Box and truck painted gray.

Operator moves trunnion truck to where forked uprights engage box trunnions, then a slight push down on truck handles picks box 3" off floor for easy wheeling. May also be used with overhead hoist.

ORDER BY "ITEM" NUMBER

TRUNNION BOX—Item B-290—$13.85 ea.
(Minimum order ten boxes)

TRUNNION TRUCK—Item B-268—$37.50 ea.
Prices f.o.b. Detroit

Priority with order avoids delay.

Palmer-Shile Co.
7116 West Jefferson Ave., DETROIT 17, MICH.

▲ Mention Item NED-2054 when writing ▲

R & M ALL-STEEL HOISTS

New design . . . simplified mechanism . . . for lower headroom, faster load handling, and greater operating economy!

Note the extreme simplicity of the new R & M All-Steel hoist shown above, with cover removed. There are no useless "gadgets" to cause trouble and reduce efficiency. All mechanism can be easily withdrawn.

★

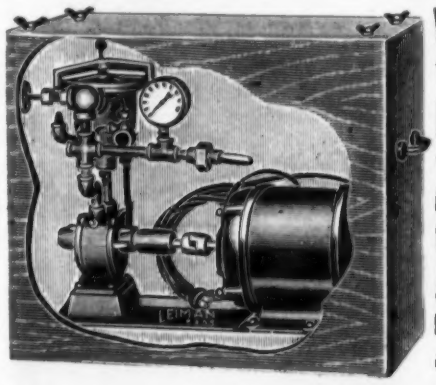
Whether your material handling requires moving 1,000 pounds or 15,000 pounds, there's an R & M all-steel hoist that will do the job better. Get complete facts on the R & M line of all-steel hoists, including R & M's newest all-steel, low-headroom "production speeder" and "space saver."

Write now for Folders No. 800 and 801-NED. It will pay you to "take it up" with R & M—today.

ROBBINS & MYERS, INC.
HOIST & CRANE DIVISION, SPRINGFIELD, OHIO

▲ Mention Item NED-2055 when writing ▲

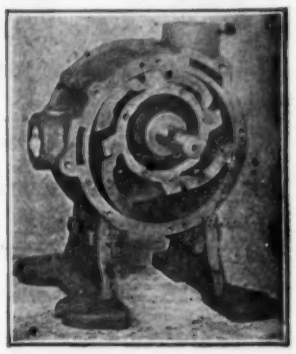
▲ Mention Item NED-2056 when writing ▲



VACUUM 1 to over 29 ins.
PRESSURE 1 to 25 lbs.—Both in a single unit
LEIMAN BROS. Air Pumps
NOISELESS
POWERFUL
EFFICIENT

PORTABLE UNIT

for pump-priming, agitating liquids, vacuum impregnating, cooling, operating gas machines, gas furnaces, blow pipes, vacuum holding chucks, gas boosting, testing by vacuum or pressure, sandblasting.

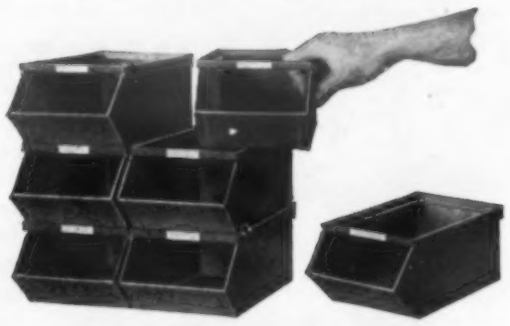


TAKE UP THEIR OWN WEAR

LEIMAN BROS. 167 CHRISTIE STREET NEWARK, N. J.

▲ Mention Item NED-2057 when writing ▲

We have been given permission by WPB to manufacture Stackbins to be used as portable containers for production and assembly.



Save Time and Labor Handling Parts and Materials

Patented *Stackbins* keep parts and materials instantly accessible—eliminate waste hand motions—stack rigidly to form units of exactly the right shape and capacity at the point of assembly—save time and labor handling parts and materials.

Write today for full details and prices on all-welded steel *Stackbins*. Stackbin Corp., 71 Troy St., Providence, R. I.

STACKBINS
"STACKED AND STILL ACCESSIBLE"

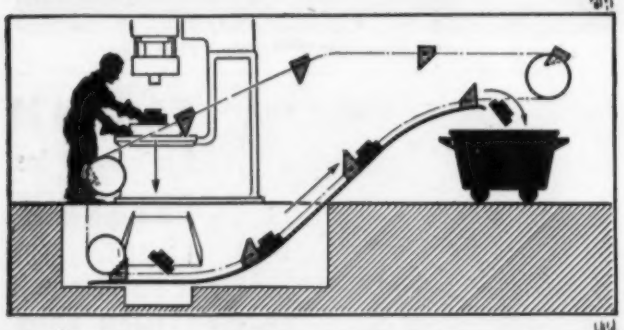
▲ Mention Item NED-2058 when writing ▲

Can You Use
24 ADDITIONAL WORKERS?

Lamson Engineers May Find Them . . . right in your plant!

★ A large Detroit forge plant required two men, besides the operator, on each of 12 hammers, to lift forgings from a pit where they were dropped by the machines, to floor level, and into trailer trucks.

★ Lamson engineers devised the 21-foot pusher flight conveyor illustrated. As an immediate result of this Lamson installation, 24 men were released for more productive work. The confusion, delays and accident hazards of the old manual system were eliminated.



★ Lamson engineers can help you to multiply the efficiency of existing manpower. Ask for our latest booklet, or better yet, have a Lamson engineer call. No obligation is involved.

LAMSON
CONVEYORS AND TUBES
Tools for Co-ordinated Control

LAMSON CORPORATION
3000-3010 Lamson St., Syracuse 1, N. Y.
☐ Please send me latest booklet on Lamson Conveyors.
☐ Have your sales engineer call.
Name..... Position.....
Company.....
Address..... State.....
Because of the paper shortage, this booklet can be sent only to those who name their company and position.

▲ Mention Item NED-2059 when writing ▲

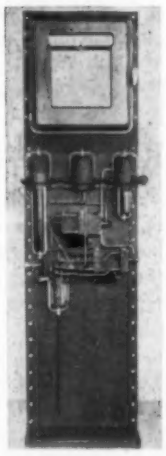
PORTABLE SANDER

Equipped with flexible sanding pad which detaches from machine by simply pulling out latch, Sterling 1000 electric portable sander is designed to cover entire range of abrading from coarse sanding to lapping and finishing. Several pads loaded with abrasives can be kept near work for quick exchange. When different grades of abrasives are used on job, additional pads loaded with coarse and fine grits can be switched when necessary, thus avoiding necessity for operator to stop work and reload.

Sander provides fast, precise, uniform cutting on wood, metal and plastic. Sanding pad is flexible and will conform to convex or concave surfaces of moderate curvature. Special pads for unusual contour sanding or rubbing are also available. Tumbler action locking on sanding pad can be operated easily by key that is furnished with machine or by screwdriver. As tumblers are turned to lockup position, they draw in slack, pulling abrasive taut on pad. Tumblers operate with only one-fourth turn and lock abrasive securely in position. Vibration while pad is moving at speed of 4500 oscillations per minute is so negligible that all lettering on nameplate can be easily read when sander is in operation. This smooth performance permits operator to use it constantly without tiring and to hold it without difficulty from any position with one hand. Made by **Sterling Tool Products Co.**, 358 E. Ohio St., Chicago 11, Ill.

▲ Mention Item NED-2060 when writing ▲

COMBUSTION GAS ANALYSER



Built for installation in large metallurgical plants, this gas analyser continuously records oxygen, carbon dioxide, carbon monoxide and hydrogen in combustion processes. It is adaptable for all processes wherein knowledge of amounts of above gases is required. Its use enables close control in chemical processes, oil refining and in operation of various types of kilns, inert gas producers, furnaces and other combustion equipment.

Operating directly from alternating current supply line, recorder may be located at any required distance from sampling point. Contacts can be furnished for operating warning signals and to actuate various control circuits. Instrument accomplishes analysis by direct comparison of thermal conductivity of sample with that of reference gas or by comparison of thermal conductivity of sample before and after chemical absorption or combustion.

Continued record of analysis is provided on 10-inch strip chart. Four different registrations, one for each gas, are shown by different colors and numbers on chart. Recorder is automatically connected to circuit of each analysis cell in succession, duration of each connection being one minute. There is no time lag between points because gas sample flows continuously through all cells. Made by **Cambridge Instrument Co.**, 3732 Grand Central Terminal, New York, N. Y.

▲ Mention Item NED-2061 when writing ▲

A Clear Ceiling with
CULLMAN *Drives*

Counter shafts and over-head belting are eliminated by the installation of Cullman Machine Drives. Result . . . increased safety and cleanliness, and increased machine production with new machine efficiency.

Only four bolt holes are needed in the bed of a machine to attach the Cullman Machine Drive unit.

CULLMAN WHEEL CO.
1357 Altgeld St., Chicago, Ill.

▲ Mention Item NED-2062 when writing ▲

EVERY ONE A CHAMPION
CHAMPION

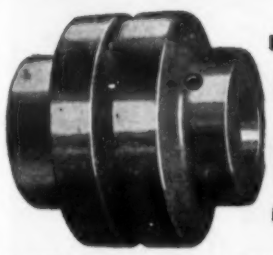
Power HACK-SAW Stand

May also be used as a jack. Maximum adjustment, six inches. Swivel head. Base, diameter, 14 in.; Height, extended, 30 in.; Height, contracted, 24 in.; Weight, 80 lbs.

The WESTERN Tool and Manufacturing Co.
SPRINGFIELD, OHIO

▲ Mention Item NED-2063 when writing ▲

DRIVES
VEE-BELT
VARIABLE SPEED
FLEXIBLE COUPLING



PROMPT DELIVERY

MOTOR FLEXIBLE COUPLINGS up to 25 H. P.
VARIABLE SPEED

WRITE FOR LITERATURE

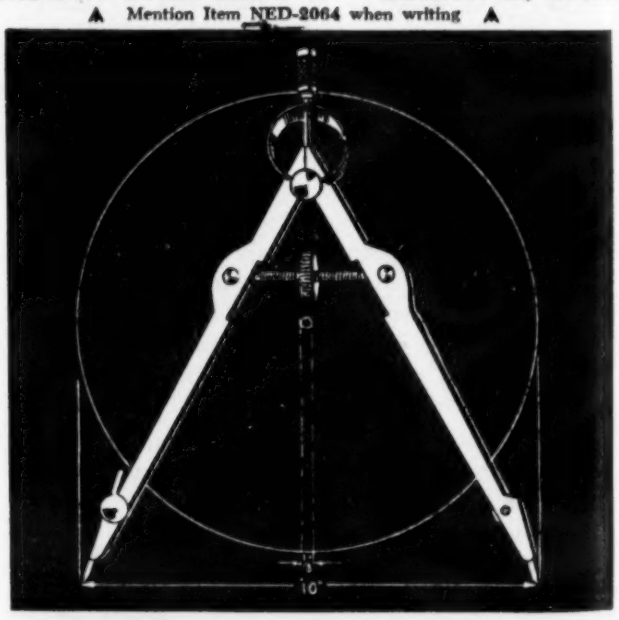
DIE CASTINGS

Send us your blueprints. Our facilities enable us to quote attractive prices and give prompt service on zinc and aluminum die castings.

FAST SERVICE

CONGRESS DIE CASTING DIVISION
CONGRESS TOOL & DIE CO.
3752 EAST OUTER DRIVE DETROIT 12, MICH.

▲ Mention Item NED-2064 when writing ▲



with *One* Vemco Compass

From ⅛" to 10", this large VEMCO Bow Pencil Compass will draw light or dense circles in pencil on paper, wood, or metal. Open truss design makes possible a reduction of 40% in the weight of this VEMCO over older types.

VEMCO instruments are available singly or in sets. See your dealer or write direct.

V & E MANUFACTURING CO.
PASADENA • CALIFORNIA

▲ Mention Item NED-2065 when writing ▲

BLACK DIAMOND
• PRECISION DRILL GRINDERS •

±.001 DEMANDS THE USE OF SHARP, ACCURATELY GROUND DRILLS. GET THEM AUTOMATICALLY WITH A BLACK DIAMOND

FOR grinding small gauge and fractional drills. One Black Diamond Drill Grinder, in any average Plant, will meet all production demands.

On this machine, any apprentice becomes a skilled operator . . . can produce quantities of sharp drills, ground to perfection . . . with lips of uniform length . . . correct angle . . . proper clearance for accurate drilling.

Black Diamond Grinders cut grinding costs . . . save expensive drill stock . . . reduce breakage . . . release skilled labor for more important work . . . and the Web Thinning attachment efficiently cares for Notched, Colton, or Crank Shaft Points.

SAWS BLACK DIAMOND TOOLS

If you use small drills singly or in gangs—you are losing time and money unless you have a Black Diamond on the job.

Write for folder today.

BLACK DIAMOND SAW & MACHINE WORKS, Inc.
48 NORTH AVENUE NATICK, MASSACHUSETTS

▲ Mention Item NED-2066 when writing ▲

CHRONO-TACHOMETERS

. . . and their contribution to instrumentation.

For several years our chrono-tachometers have been recognized and used by Aircraft Engine Manufacturers as the most accurate and most dependable instruments for precise speed measurements to determine fuel consumption, oil consumption and developed horsepower.

The method of obtaining precise speed measurements, that of employing a clutch type revolution counter, connected in multiple with a clutch type stop clock for simultaneous operation, early established its superior accuracy, convenience and reliability.

Constant attention and effort have been devoted to improvements. One of the first and most valuable was the development of electric drive whereby self-synchronous motors, or a self-exciting three-phase alternator and synchronous motors, are used instead of flexible shafts.

Another addition was the rapid speed check which obtains an accurate count of revolutions for an exact 1/10 of a minute.

The problem of maintaining clockwise rotation of tachometer and revolution counter hands has been solved by development of an automatic reversing mechanism for flexible shaft drives, and by control switch operation for electric drives.

For those users to whom an extra large tachometer dial is important, a dial 6″ in diameter is available.

The additional feature on which we are now working and which will be an integral part of the chrono-tachometer is an overspeed cutout to operate automatically to shut off an engine when it exceeds a certain speed, and thereby prevent it from running away.

Write for Literature. Address NED-17.

THE STANDARD ELECTRIC TIME CO.
"Split-Second Measurement by Standard"
SPRINGFIELD, MASSACHUSETTS

▲ Mention Item NED-2067 when writing ▲

SELF-POWERED VENTILATOR

Primarily designed for use in cooling interior of aircraft during repair work in hot climates, this portable self-powered ventilator has also been found useful for drying out bilges, enginerooms and double bottoms on boats, for driving out gases and fumes from confined spaces and, without duct, as man-cooler and repellent of winged insects.

Unit consists of pressure type fan, driven by small gasoline engine or electric motor, connected to collapsible canvas duct through which air is propelled to area to be ventilated. Air delivery at 3400 revolutions per minte is 4500 cubic feet per minute without duct assembly attached and 4000 cubic feet per minute with duct assembly attached. Whole unit, mounted on wheels is only 24⅝ inches high. It weighs but 87 pounds. Thus, it can be wheeled easily by one man and lifted into interior of plane when it is desirable to use ventilator without duct or to ventilate distant compartment. Made by **The Herman Nelson Corp.**, Moline, Ill.

▲ Mention Item NED-2068 when writing ▲

HEAT TREATING UNIT

Combining high temperature hardening furnace on left, quench tanks in center and recirculating draw furnace on right into single assembly, model CH unit is designed for complete heat treating operations. It is made in 8 x 6 x 12-inch, 10 x 8 x 15-inch and 12 x 10 x 18-inch sizes.

Temperature of hardening furnace is controlled automatically by indicating pyrometer which can be set to any temperature in range of 1350 to 2300 degrees Fahr. Protective atmosphere can be introduced into muffle or heating chamber, controlled by two valves on panel board. Gages make it possible to duplicate atmosphere once needed type has been established. Seven inch walls of fire brick and insulation assure efficiency of operation.

Small quench tank is for oil and large tank for water. Water surrounds oil tank and perforated baskets are provided in both tanks.

Recirculating draw furnace has range of 250 to 1100 degrees Fahr., controlled by automatic indicating pyrometer. Interior is of alloy steel, surrounded by cast insulating lining which in turn is protected by outer steel shell. Air for tempering is heated by unit in base and recirculated by high velocity alloy steel fan.

Outer shell is of welded formed steel with air grilles as shown. Foot treadles open doors of furnaces. Only connections required are for gas and electricity. Made by **Waltz Furnace Co.**, 2461 Gilbert Ave., Cincinnati 6, O.

▲ Mention Item NED-2069 when writing ▲

Two New DE-STA-CO Clamps for AIRCRAFT JOBS

Model 462-B Model 462

- Two light weight, small, portable toggle clamps, especially suited for clamping work where space limitations prohibit use of larger tools. Both clamps same size, 7¼″ long overall. Note generous throat size. Much quicker acting and more easily handled than "C" clamps.
- **Model 462-B** is provided with thumb screw and lock nut gap adjustment.
- **Model 462** has the De-Sta-Co Pressure-Matic feature, which provides automatic gap adjustment for any clamping thickness from 0″ to ⅜″ . . . no manual adjustment necessary.

Other sizes available; send for literature.

DETROIT STAMPING CO.
Established Over 25 Years
360 Midland Ave • Detroit 3, Mich.

▲ Mention Item NED-2070 when writing ▲

SMOOTH STEPLESS SPEED ADJUSTMENT

Provides smooth stepless output speed adjustment from minimum to maximum in both directions when driven by constant speed nonreversing prime mover. 2 to 300 horsepower capacity.

Compact, self-contained and self-lubricating, the unit provides efficient speed and torque control with inherent overload protection. It may be stalled repeatedly without damage.

Write for application data outlining your requirements as to speed and torque range.

VICKERS *Incorporated*
1456 Oakman Blvd. • DETROIT, MICHIGAN

▲ Mention Item NED-2071 when writing ▲

▲ Mention Item NED-2072 when writing ▲

NEW
CLIPPER SEALS
For Post-War Use

TO meet specialized wartime requirements, Johns-Manville has developed a number of new designs in bearing protectors. These new Clipper Seals protect bearings in two ways:

1. **by keeping bearing lubrication from leaking out and**
2. **by preventing abrasive or corrosive materials from getting in.**

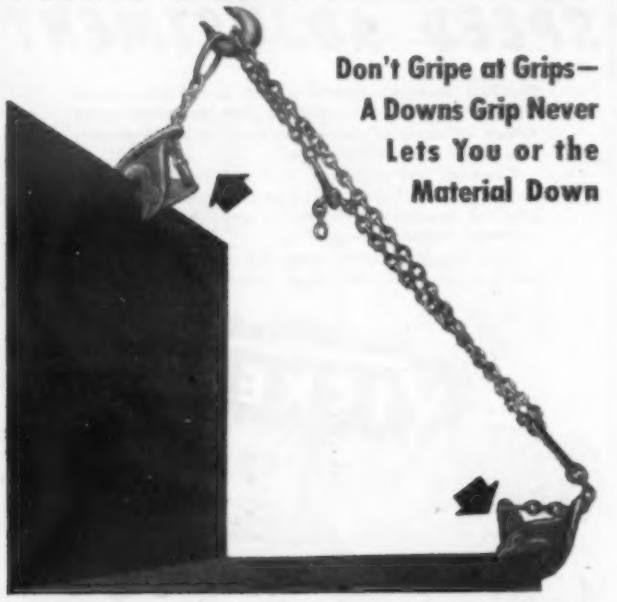
These new Clipper Seals are not now available because of wartime demands. However, Johns-Manville engineers will welcome an opportunity to consult with you on any bearing protection problems you may have in connection with post-war requirements.

Write Johns-Manville, 22 East 40th Street, New York 16, N. Y.

JM JOHNS-MANVILLE PACKINGS & GASKETS

▲ Mention Item NED-2073 when writing ▲

PLATE GRIPS THAT HOLD



Downs Safety Plate Grips will hold with a positive grip in any position. Ideal for lifting or laying material in a horizontal position or for turning plates over without the slightest danger of the grip letting go.

Will not damage finished surfaces—easily operated by one man. Available for various plate thicknesses up to 6" and ½ to 10 ton capacities. Write today for illustrated folder No. 380.

DOWNS CRANE & HOIST CO.
MECHANICAL ENGINEERS
540 West Vernon Ave. • Los Angeles 37, Calif.

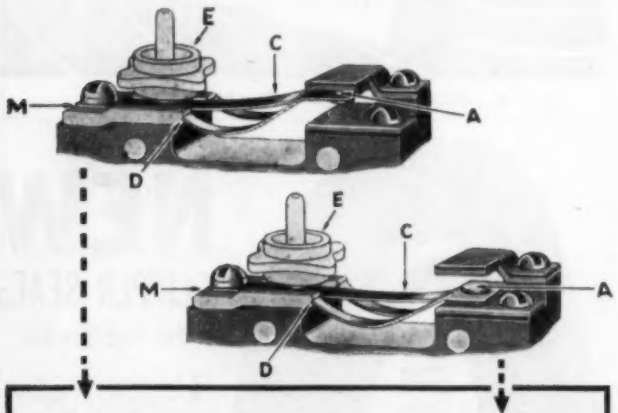
▲ Mention Item NED-2078 when writing ▲

Why MICRO SWITCH

PROVIDES A LONG SNAP-ACTION LIFE

Micro Switch provides lightning-fast, snap-action control of electric circuits with reliable and positive operation accurately repeated over millions of cycles. This performance is made possible by use of the unique, field tested, and proven operating principles of the Micro Switch.

Micro Switch is Underwriters' listed and rated at 1200 V.A., at 125 to 460 volts a.c. Capacity on d.c. loads depends on load characteristics. A wide variety of basic switches and actuators provides characteristics varying from high vibration resistance to sensitivity requiring only 2/1000 ounce inches of operating energy.



MICRO SWITCH OPERATING PRINCIPLE. The operating principle of the Micro Switch as illustrated here is simple and fundamentally correct. The long member of the one-piece spring "C" is supported as a cantilever at "M". The two shorter compression members of the spring rest in specially shaped (patented) V's. When the plunger "E" deforms the long tension member, the cantilever force overcomes the vertical force supplied by the compression members and the free end of the spring "A" slaps the contact from one stop to the other with lightning-fast speed. Snap-action in the reverse direction occurs when the deformation of the tension members of the spring by plunger "E" is removed.

Send for Micro Switch Handbook-Catalog No. 60. Find out how Micro Switch can save time in your shop . . . contribute to better performance. If you are specializing in production of aircraft equipment, also ask for Handbook-Catalog No. 70.

Micro Switch Corporation, Freeport, Illinois
Branches: 43 E. Ohio St., Chicago (11) 4900 Euclid Ave., Cleveland (3) 11 Park Place, New York City (7) 1709 West 8th St., Los Angeles (14) Sales and Engineering Offices: Boston • Hartford

BUY ALL THE WAR BONDS YOU CAN

The trademark MICRO SWITCH is our property and identifies switches made by Micro Switch Corporation

© 1944

MICRO MS SWITCH

Made Only By Micro Switch Corporation, Freeport, Ill., U.S.A.

▲ Mention Item NED-2079 when writing ▲

PORTABLE DUST COLLECTOR

Featuring improved design which includes new intake and exhaust construction, No. 2 Filtaire portable dust collector has fan located at front to draw in all dust from wide area. Air is directed upward by baffle plate and is exhausted through two replaceable Dustop filters at top. Fan is driven by V-belt from 1/6 horsepower motor located behind baffle plate and isolated from air stream. Drive shaft has front and rear dustproof bearings which are equipped with grease gun fittings.

Unit can be used with dry grinding and polishing operations and can be plugged into any 110-volt power line. Collector unit can be raised or lowered to suit conditions of application. No special hoods or piping are required. Because cleaned air is recirculated within shop, there is no heating loss during cold weather. Made by Edward Blake Co., 634 Commonwealth Ave., Newton Centre 59, Mass.

▲ Mention Item NED-2080 when writing ▲

RESISTANCE WELD CLIPS

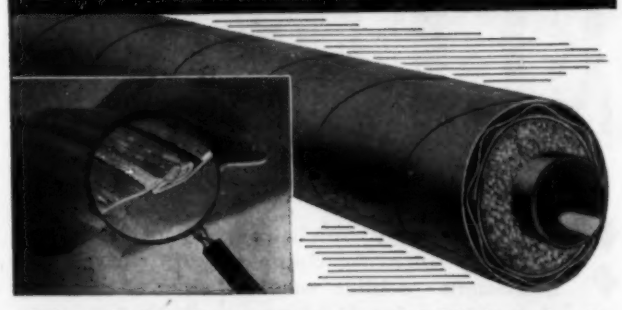
Developed to facilitate attachment to circular surfaces of all diameters, this line of weld clips is designed for resistance welding. Large illustration shows SK-484 weld clip assembly in 3/16 x 2-inch size attached to 1-inch outside diameter pipe. Clip is shown in upper part of smaller illustration. Also shown in smaller illustration, lower left, is SK-486-A spring mounting lug for welding to steel tubing 1¼ inch in outside diameter, and, lower right, SK-504 weld bolt with concave head which is made on production basis for welding to ¾-inch stainless steel bars.

These units are examples of extensive line of weld fittings which speed production. They displace methods formerly

used whereby holes were drilled in tubing for attachment of clips or lugs. Welding is instantaneous, requiring less than 1 second welding time. Fittings are engineered for various applications. They can be made in production quantities, using basic tools. Made by The Ohio Nut & Bolt Co., 608 Front St., Berea, O.

▲ Mention Item NED-2081 when writing ▲

Now-Ric-wil Prefabricated Conduit is "Seam Welded"



The spiral lock-seam running the full length of the conduit of Ric-wiL insulated pipe units is now made even stronger by welding. Seam is automatically machine welded at the factory—before galvanizing—assuring a permanently tight conduit. Each section is hermetically sealed and tested under 15 pounds air pressure.

With this and other recent improvements, Ric-wiL prefabricated insulated conduit is easily the strongest, most durable, and most efficient protection for steam and process piping that can be obtained. Write for descriptive literature.

RIC-WIL INSULATED PIPE CONDUIT SYSTEMS
THE RIC-WIL COMPANY · CLEVELAND, OHIO

▲ Mention Item NED-2082 when writing ▲

Royal INCENTIVES

The Nation's headquarters for Badges, Pins, Emblems, Buttons, Identifications and Trophies as well as The most productive methods for obtaining the most from their use.

Send for our free and complete book on the new subject of Incentive Engineering.

▲ Mention Item NED-2083 when writing ▲

Invincible flux recovery units automatically retrieve abrasive welding flux from work in progress, then separate the fused and unfused flux and return the latter to the hopper of the welding head.

On the average job, the value of the flux salvaged in a few weeks' time is greater than the cost of the Invincible equipment. In addition, there are substantial savings in manhours, and the elimination of costly disposal problems.

Write now for complete information.

INVINCIBLE VACUUM CLEANER MFG. CO.
DOVER, OHIO

▲ Mention Item NED-2084 when writing ▲

Eat Soup With a Fork?

IT'S LIKE trying to handle small parts in a basket with openings that are too large.

Let Stanwood engineers help you design or select a basket, rack, tray or container ideally suited to your needs. They are our specialty. Material and designs for every heat-treating, quenching, pickling, degreasing and washing requirement. Prompt delivery. Send for Bulletin 14.

Stanwood Corporation FABRICATED METAL PRODUCTS
4821 W. Cortland St. Chicago (39), Illinois

▲ Mention Item NED-2085 when writing ▲

How to "Kill TWO Birds With One Stone"

—Or THE MOST ECONOMICAL WAY TO STORE & DISPENSE LIQUIDS!

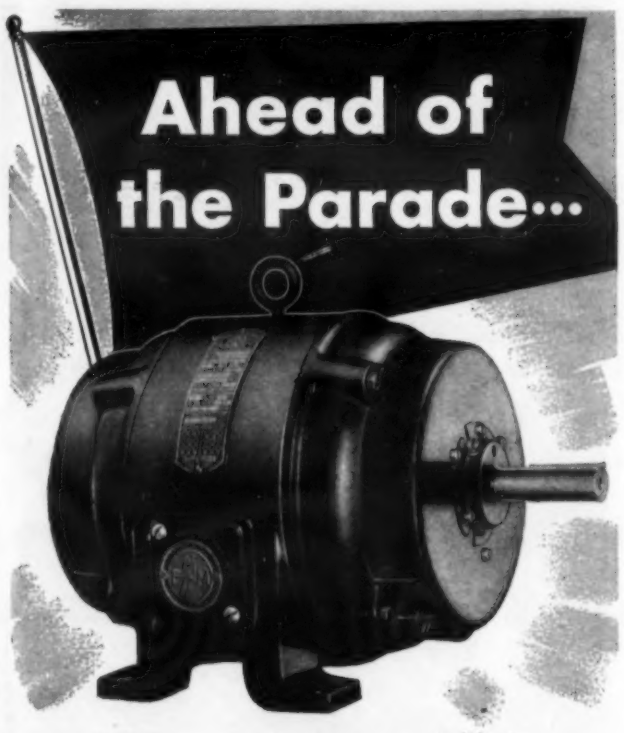
Save time! Save money! Reduce fire hazards. Use the Phillips Hand Operated Barrel Pump to convert the original container for liquids into a storage and dispensing outfit.

One of the complete line of Phillips Barrel Pumps is the Model 174 shown below. Available with quart or gallon stroke measuring pump or 12 G.P.M. non-measuring rotary pump. Threaded for 1½" and 2" drum openings. Cast iron shut-off nozzle. Adjustable suction with built-in brass foot valve. Amazingly light, this pump can be easily shifted from one container to another by one man. These pumps can also be furnished with self contained portable tank units.

DEPENDABLE PHILLIPS SERVICE STATION EQUIPMENT

THE PHILLIPS PUMP AND TANK CO.
5004 Brotherton Road, Cincinnati 9, Ohio

▲ Mention Item NED-2086 when writing ▲



This NEW Postwar Fairbanks-Morse MOTOR *Available Now!*

This new general purpose Fairbanks-Morse Motor is ahead of the parade. It's out in front by a wide margin in postwar design. It is truly the motor of tomorrow, available today.

You can buy this Fairbanks-Morse Motor knowing that it will be just as modern—just as efficient—just as up-to-the-minute in years to come as it is today.

Here's What This New Motor Offers You

- ★ **Copperspun Rotor**—exclusive with Fairbanks-Morse; the only rotor centrifugally cast in *one* piece and of *copper*.
- ★ **Protected Frame Construction**—excludes falling particles and dripping liquids.
- ★ **Ball Bearings**—sealed in cartridge type housing.
- ★ **Conduit Box**—provides alternate assembly—gives new meaning to "adaptability" and "convenience."
- ★ **Cross Flow Ventilation**—eliminates hot spots, assures uniform cooling.
- ★ **General Purpose**—continuous duty, rated 40° C.

Write for detailed information. Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

BUY WAR BONDS

FAIRBANKS-MORSE
DIESEL ENGINES · PUMPS · MOTORS · GENERATORS · WATER SYSTEMS · SCALES · STOKERS · FARM EQUIPMENT · RAILROAD EQUIPMENT
Motors

▲ Mention Item NED-2087 when writing ▲

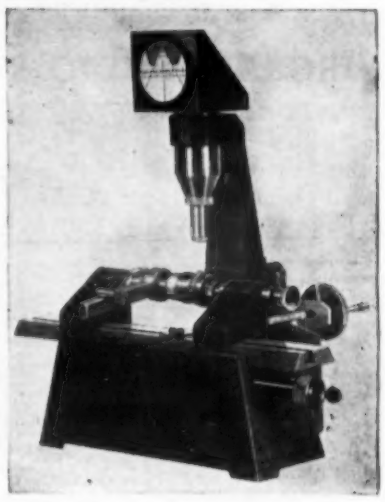
COOLANT SYSTEM

Designed for installation on Rogers Perfect 36 vertical turret mills, this coolant system permits delivery of two streams of coolant to tool and work through flexible tubing. Mounted on base is pump that is driven by direct-connected fractional horsepower motor. This pumping unit is self-contained, enclosed and self-priming. To insure positive coolant flow during all machining operations, pump starting switch is connected to main switch.

Coolant flows back to lowest point on frame where it is picked up, cleaned and recirculated to tool and work. System is available on both standard and high speed models of vertical turret mills which bore, drill and turn work up to 36 inches in diameter. Made by Rogers Machine Works Inc., 151 Arthur St., Buffalo 7, N. Y.

▲ Mention Item NED-2088 when writing ▲

OPTICAL PROJECTOR

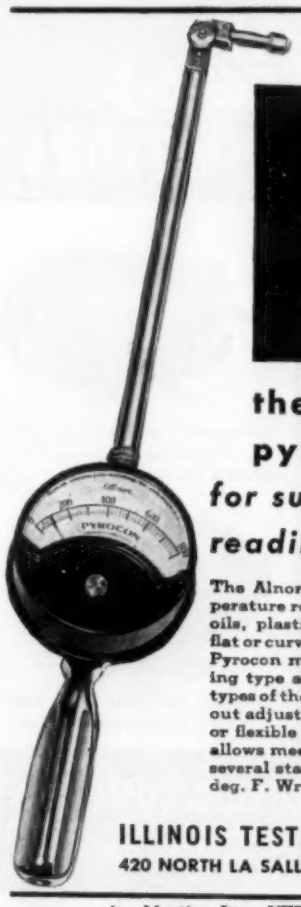


Productivity of thread grinders is claimed to be greatly increased through use of this thread pick-up projector which also effects economy and improves quality of ground threaded parts. Unit is optical device for presetting driving dog on pre-threaded work so that when such work is placed in grinder, grinding wheel enters trough of oversize thread to remove finishing stock from both flanks without further adjustment.

Use of unit makes practical application of "precut, harden, finish grind" schedule with subsequent saving in time because most of stock is removed in screw machine and single pass of grinder will meet most production requirements. Wheel and diamond life are extended and case hardened stock can be used. Maximum hardness of case is retained because of small stock removal.

Work up to 4½ inches in diameter and 12 inches long can be checked. Machine may be used in combination with any thread grinder. Screen is ruled with 60-degree V and other graduations to indicate depth of root on American National threads. Supplementary graduations on same screen permit Acme and Whitworth threads to be picked up. Special screens for these and other thread forms are also available. Made by Acme Industrial Co., Dept. NED, 200 N. Laflin St., Chicago 7, Ill.

▲ Mention Item NED-2089 when writing ▲



Alnor PYROCON

the contact pyrometer *for surface temperature readings . . .*

The Alnor Pyrocon gives you accurate temperature readings in a few seconds, of liquids, oils, plastic materials, or surfaces, whether flat or curved, stationary or moving. The Alnor Pyrocon movement is a rugged, shock resisting type and is used with any one of eleven types of thermocouples, interchangeable without adjustment or re-calibration. Either rigid or flexible arm, and choice of thermocouples allows meeting any individual needs. Built in several standard ranges, 0-400 deg. F. to 1200 deg. F. Write for descriptive bulletins.

ILLINOIS TESTING LABORATORIES, INC.
420 NORTH LA SALLE STREET • CHICAGO 10, ILLINOIS

▲ Mention Item NED-2090 when writing ▲

HOW WOULD YOU LIKE ...this kind of performance?

Twelve years ago a sand and gravel company bought a Robins Gyrex Vibrating Screen, hung it in the open air between members of an exterior truss, where all the material entering the plant passed over it for rinsing.

Just recently, the owner had to change the V-rope drives—the only maintenance or repair on this screen in twelve years. (Even this wasn't really an expense, because the replaced ropes were spares provided when the Gyrex was originally bought.)

Have you a screening operation where you would like this kind of performance? Write Robins. Please address Dept. NED-4.

For Material Aid in Materials Handling ...It's ROBINS

ENGINEERS • MANUFACTURERS • ERECTORS
ROBINS CONVEYORS INCORPORATED
Founded in 1896 as Robins Conveying Belt Co.
PASSAIC • NEW JERSEY
MATERIALS HANDLING MACHINERY

▲ Mention Item NED-2091 when writing ▲

One Reason Why Mechanics Say...

DURO-CHROME HAND TOOLS *are Doggone Good Tools!*

DURO-CHROME *Sockets are Hot Broached*

By Duro's patented Hot Broached Method, the corners or teeth of the socket are formed while the metal is red hot. Thus tears, stresses and cracks resulting from cold broaching (which cause socket failures) are avoided

Insofar as is consistent with war requirements, we are doing our best to supply Duro Chrome Sockets and Tools to essential industry. Tell us your needs and we'll send data pages and information on availability. DURO METAL PRODUCTS CO., 2649 N. Kildare Ave., Chicago, Ill

DURO TOOLS (HAND TOOL DIVISION)
The Mechanic's Best Friend
OVER A BILLION BUILT SINCE 1916
ALSO MAKERS OF DURO MACHINE TOOLS

▲ Mention Item NED-2092 when writing ▲

LIFT THE LOAD HIGHER AND FASTER WITH *Northern* HIGH-LIFT LOW HEADROOM ELECTRIC HOISTS

LOOK WHERE THE HOOK GOES

The high hook lift-low headroom feature of Northern Electric Hoists will add 12" to 36" to the working height of your building—without extra expense—without altering the building. This means better use of storage space, easier handling of bulky loads, faster operation because clearances are greater.

Northern Hoists are also superior in strength, lifting power, speed, and handling.

Northern WRITE FOR BOOKLET B
ENGINEERING WORKS
2615 Atwater Street, Detroit, Michigan
Offices in Principal Cities
Northern Crane & Hoist Works Limited, Windsor, Canada

▲ Mention Item NED-2093 when writing ▲

A SMALL RHEOSTAT with BIG FEATURES

Ward Leonard has produced their 4" Plate Type Rheostat with all the desirable features of their largest equipment. It dissipates heat from both sides. The contacts are solid metal blocks for durability. Action is smoothness itself. There are forty-three steps of control. Data Bulletins are available on the various Ward Leonard Rheostats. Write for bulletins describing the size and type of Rheostats of interest to you.

ARMY E NAVY

WARD LEONARD

RELAYS · RESISTORS · RHEOSTATS

Electric control (WL) *devices since 1892.*

WARD LEONARD ELECTRIC CO., 51 South St., MT. VERNON, N. Y.

▲ Mention Item NED-2094 when writing ▲

Stop "Breaking the Backs" of men in your factory!

(Model 30.11A)

Bend rods, press bushings, move machines, lift heavy loads, etc., quicker and easier with Hein-Werner Hydraulic Jacks.

Model 30.11A (illustrated) incorporates an entirely new arrangement of *dual operated* speed pumps—making this 30 ton capacity jack unusually fast and easy operating.

Hein-Werner also makes other jacks of 3, 5, 8, 12 and 20 tons capacity... For details, consult your nearest industrial supply distributor, or write us.

HEIN-WERNER MOTOR PARTS CORP.
Waukesha, Wisconsin

HEIN-WERNER HYDRAULIC JACKS
Are Built Right and Priced Right

▲ Mention Item NED-2095 when writing ▲

INSTANT PROTECTION WHEN CLOTHING IS AFLAME

THE M·S·A

FIRE BLANKET

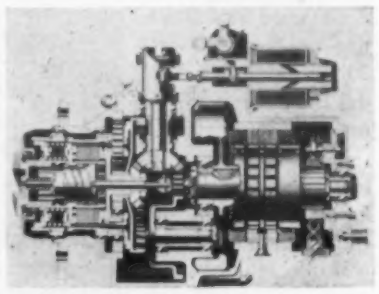
Providing an indispensable refuge wherever fire may imperil the worker, the M. S. A. Fire Blanket is compact, efficient, always ready for service at every danger point in the plant—offering lightning action; positive, foolproof operation; assured protection.

Write for complete details in Bulletin FA-80.

MINE SAFETY APPLIANCES CO.
Braddock, Thomas and Meade Streets · Pittsburgh, Pa.
District Representatives in Principal Cities

▲ Mention Item NED-2096 when writing ▲

AIRCRAFT ELECTRIC STARTERS



Providing high initial cranking revolutions per minute followed by direct cranking to aircraft engines of 450 to 1200 horsepower having piston displacement of approximately 670 to 1860 cubic inches, this series 43 inertia and direct cranking electric starter is designed for installation on aviation engines incorporating 6-inch S.A.E. starting mounting pad. They are available for 12 or 24-volt direct current, one-wire grounded operation with either 3 or 12-tooth jaw for left or right hand rotation.

Starter mechanism consists of heavy duty accelerating and direct cranking electric motor, precision-balanced flywheel keyed directly to armature shaft, reduction gearing which consists of four planetary gear set and two stages of spur gear reduction, adjustable multiple disc clutch, engaging mechanism, baffle plate and starter jaw.

Starters provide initial cranking speed of 110 revolutions per minute followed by direct cranking at 35 and 48 revolutions per minute for 12 and 24-volt starters respectively. Brush spring tension release mechanism permits relieving brush spring tension when manual hand cranking of starter is desired. Integral solenoid relay provides remote electrical control of starter jaw engagement. Made by Eclipse-Pioneer Div., **Bendix Aviation Corp.**, 1943 Williams Ave., Teterboro, N. J.

▲ Mention Item NED-2097 when writing ▲

AIRCRAFT RADIO RECEIVER

Capable of handling multiplicity of navigational and communicational frequencies as well as services involved in modern instrument flying, Model AR-10-A radio receiver weighs only 24 pounds and is compact in size. Unit is claimed to replace five or six receivers formerly used in airplanes.

Features include beacon band coverage from 195 to 425 kilocycles with spot tuning on 278 and 271 kilocycles or any other two specific frequencies, communications band coverage from 2500 to 4500 kilocycles and from 4500 to 8000 kilocycles with pretuned circuits for twelve crystal controlled frequencies anywhere in 2500 to 10,000 kilocycle band; two radio frequency channels obtaining for day frequencies from 4.5 to 10 megacycles and night from 2.5 to 4.5 megacycles, image attenuation greater than 65 decibels and sensitivity such that input of two microvolts modulated at 30 per cent at 400 cycles produces output of 50 milliwatts at signal to noise ratio of 6 decibels.

Space limitations do not permit details regarding mechanical, electrical or other features of receivers. Full information available from **Harvey-Wells Communications, Inc.**, Southbridge, Mass.

▲ Mention Item NED-2098 when writing ▲

Peerless MARINE TYPE MOTORS
AC & DC

PEERLESS motors for marine service are manufactured in AC and DC up to 3 horsepower. Frames are cast iron or of all-steel construction (no cast iron or aluminum parts).

Also DC generators and motor generator sets consisting of DC generators with either AC or DC driving motors.

Peerless DC marine type motor for close coupled direct connected pumps, ½ to 3 h. p.

Peerless fractional h. p. DC marine type drip-proof motor.

THE *Peerless* ELECTRIC COMPANY
WARREN, OHIO
Established 1893

▲ Mention Item NED-2099 when writing ▲

YOU CAN'T BEAT THIS SCREWDRIVER

24 Hour Production Schedules Maintained

THINK OF IT

Drives No. 2, 4 or 6 screws, from 3/16" to ¾" long, at one second each.

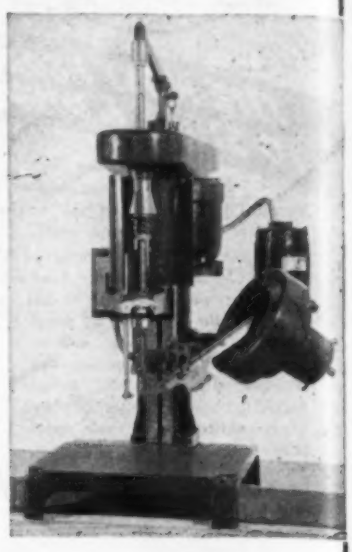
•

ALL SCREWS DRIVEN TO A UNIFORM TENSION

No Marring of Heads

•

Send Sample Assemblies For Estimates.



DETROIT POWER SCREWDRIVER CO.
2819 West Fort Street Detroit 16, Michigan

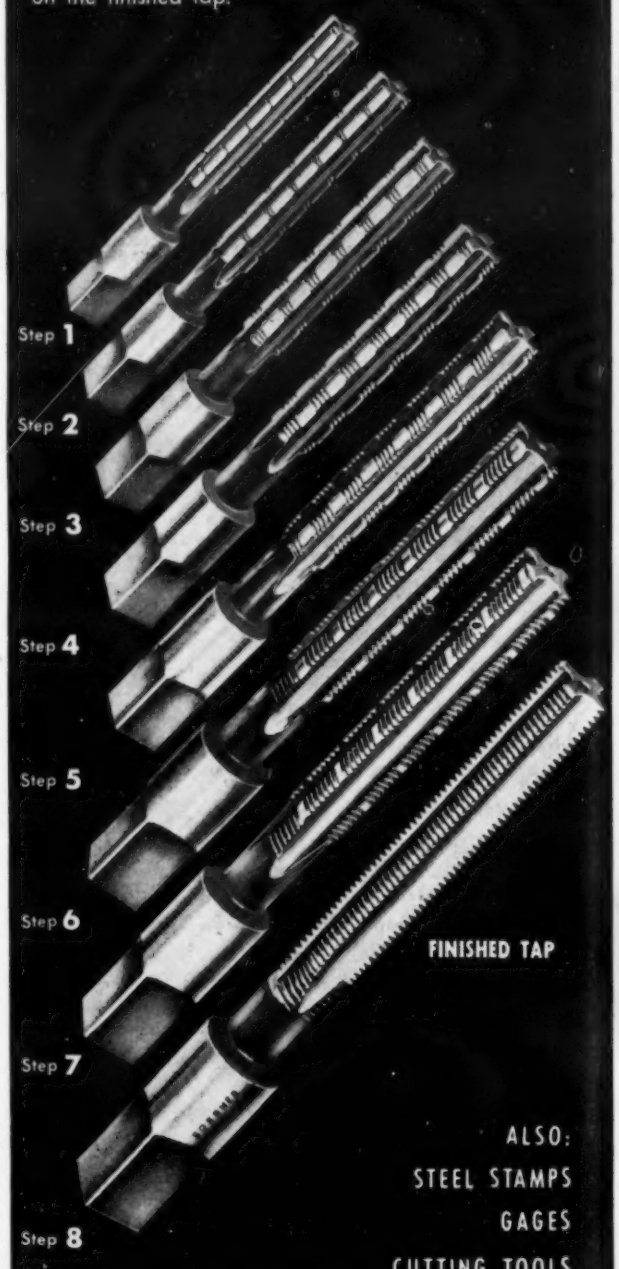
▲ Mention Item NED-2100 when writing ▲

STAGES IN THE GRINDING OF A SOSSNER

OCTUPLE THREAD TAP

(8 STARTS)

A tap that calls for the highest degree of tap-making skill. Each start must be precisely indexed and then precision ground for perfect size, lead and thread spacing on the finished tap.



ALSO:
STEEL STAMPS
GAGES
CUTTING TOOLS

SOSSNER

161 Grand St., New York City 13, or 27 B'way, Lynbrook, N. Y.

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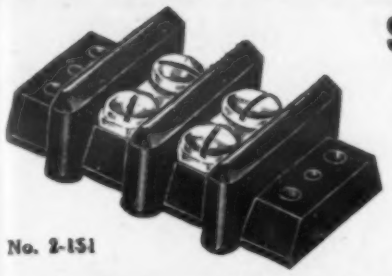
JONES BARRIER STRIPS



Solve Most Terminal Problems

No. 2-151

• A compact sturdy terminal strip with Bakelite Barriers that provide maximum metal to metal spacing. Prevent direct shorts from frayed wires at terminals.

6 SIZES—Cover every requirement. From 3/4" wide and 13/32" high with 5-40 screws to 2-1/2" wide and 1-1/8" high with 1/4"-28 screws. Jones Barrier Strips will simplify as well as improve the electrical connections of your products.

Three lines of Jones Multi-Circuit Plugs and Sockets fulfill every connection requirement. Hundreds of standard terminals.

Write today for catalog listing complete line of Jones Electrical Connecting Devices.

HOWARD B. JONES
2460 George Street, Chicago 18, Ill.

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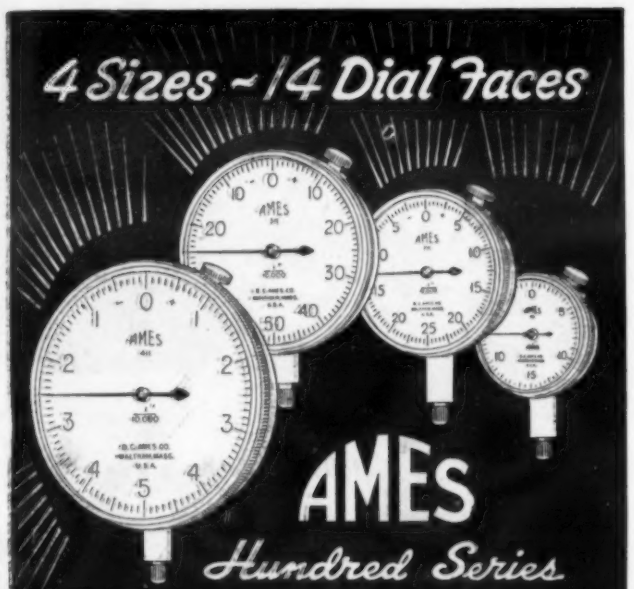

AMES
Hundred Series
DIAL INDICATORS

In four sizes with fourteen different dial graduations, indicating thousandths, half-thousandths or tenths of thousandths inches.

Speedy, accurate, inexpensive and adaptable to various measuring and testing jobs.

Write today for catalog.

B.C. AMES CO., WALTHAM, MASS.

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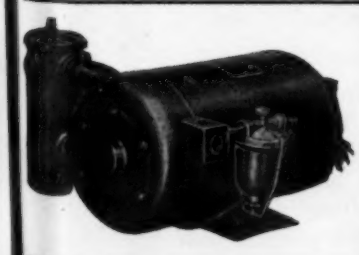
MOTOAIR

widely used by Industry and WAR PLANTS



Used for handling or separating sheets, for testing compression, simulating high altitudes; for powering airvises or chucks; tank evacuation cleaner-blower, etc. Get FACTS on Motoair!

PUMPS

VACUUM OR PRESSURE

LESS PARTS TO WEAR OUT

•

NO BELTS NO DRIVES

•

But plenty of POWER

• • •

NEW JERSEY MACHINE CORPORATION

13th St. & Willow Ave.
HOBOKEN, N. J.

Chicago Office
325 W. Huron Street

▲ Mention Item NED-2104 when writing ▲

PRESSURE CONTROL SWITCH

Applicable for solenoid operated valves, automatic control of operating cycles on hydraulic machines, controlling pumps or compressors and for operating and safety controls in chemical and oil industries, this pressure switch is available in single pole construction, with normally closed, normally open or double throw contact arrangement. It is also available as maintained contact type switch with manual reset. Contacts are rated at 10 amperes at 125 volts or 2 amperes at 600 volts alternating current.

Control element is pressure gage of direct action type. Gage will withstand shock loads on all types of surging lines. Accuracy is maintained regardless of overloads. Switch is snap acting. Easily readable scales are provided for adjustment of cutout and differential. Pressure connection is standard ¼-inch pipe tap. Electrical connection is provided for ¾-inch conduit. Mounting is effected by means of cold rolled steel base. Plexiglas window in 14-gage steel housing permits observation of gage. Made by **Hercules Electric & Mfg. Co.**, 2418 Atlantic Ave., Brooklyn 33, N. Y.

▲ Mention Item NED-2105 when writing ▲

HEATING & DIPPING TANK

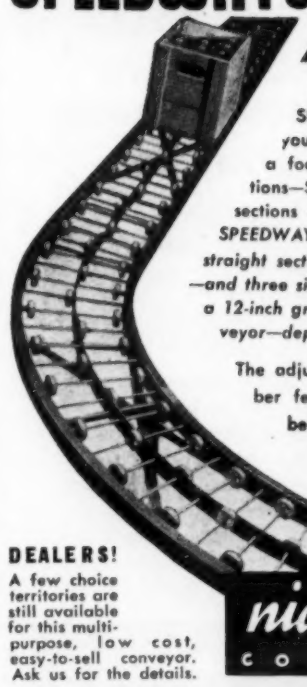
Incorporating acid compartment, this utility portable heating and dipping tank has three compartments and is basically designed for degreasing, rinsing and pickling operations. It is also suitable for etching, plating, metal coloring, waxing, fluxing, oiling, lacquering, dip painting, rust removing, salt spray testing, anodizing, pilot and laboratory operations. It may be used in manufacturing plant, machine shop, public utility or laboratory.

Dual purpose cover and shelf is acidproof and arranged to drain into tank. Flexible extension cord may be plugged into any 110 or 220-volt circuit. No. 1 compartment has standard heating element for hot alkaline degreasing compounds. No. 2 is for rinsing and No. 3 has Plast-O-Ply acid resistant lining for pickling acid solutions. This lining is also satisfactory for most electroplating solutions, acid cleaners for aluminum and magnesium, and for corrosive fluxing salts.

Heating units can be supplied extra for all three compartments. Insulating wall prevents heat loss. Heating elements have automatic temperature control. Twelve-inch round or square baskets can be used in standard models. Special linings can be provided to meet almost any service conditions. Extras include indicating thermometers, acidproof heating elements, gas-fired heaters and dipping baskets. Made by **Heil Engineering Co.**, 12901 Elmwood Ave., Cleveland, O.

▲ Mention Item NED-2106 when writing ▲

SPEEDWAYS CONVEYORS



AVAILABLE NOW!

NOW you can install new SPEEDWAYS gravity case conveyors in your plant! Lightweight (only 7 pounds a foot)—permanent or portable installations—SPEEDWAYS CONVEYORS in ten-foot sections can easily be moved by one man! *SPEEDWAYS are available in 5 and 10-foot straight sections—45° and 90° reversible curves—and three sizes of adjustable stands. As little as a 12-inch grade is required for fifty feet of conveyor—depending on what you want to move!*

The adjustable stands are tripods—with rubber feet! SPEEDWAYS is completely ball-bearing—with rust-proofed wheels and two rigid steel channel rails!

IMMEDIATE DELIVERY!

DEALERS!
A few choice territories are still available for this multi-purpose, low cost, easy-to-sell conveyor. Ask us for the details.

niagara filter CORPORATION

3080 MAIN STREET, BUFFALO (14), N. Y

▲ Mention Item NED-2107 when writing ▲

EXTRA LONG BLANKS
Highly efficient for milling of deep, narrow slots or grooves. Super high-speed steel, centerless ground to —.0005". Quickly sharpened to suit your individual needs. Usable in any spring collet. By grinding notches, blanks can be broken to any desired length. Furnished 6 to package. 8 sizes—prices per 1/2 doz:

1/10"x4"—$1.65	1/4"x4"—$2.77
1/8"x4"—$1.85	5/16"x4"—$3.47
5/32"x4"—$2.31	3/8"x4"—$3.96
3/16"x4"—$2.46	1/2"x4"—$5.31

SHORT BLANKS—For small delicate work. Same as at left but in shorter lengths. Furnished 12 to package. 4 sizes—prices per dozen:

1/10"x1-1/2"—$1.85
1/8"x1-1/2"—$1.89
5/32"x1-3/4"—$2.00
3/16"x1-3/4"—$2.23

For complete details write for Gorton Accessories Catalog offering 580 aids to production, including Cutter Grinders.

FREE

For 50 years *Specialists in "Tracer-Controlled" Machines*

GEORGE GORTON MACHINE CO.
1103 13TH STREET, RACINE, WISCONSIN, U. S. A.

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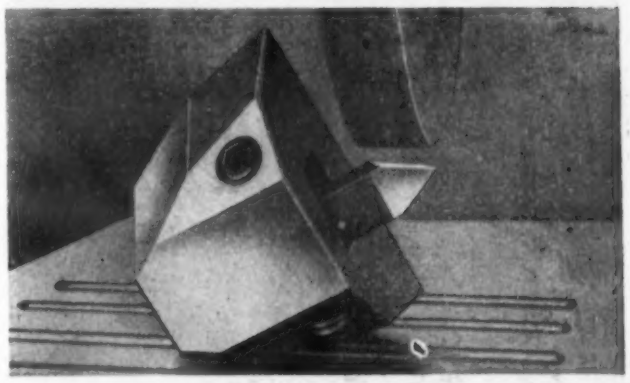


PRECISION GRINDING SIMPLE WITH THE *NEW* CLARK THREAD TOOL GRINDING FIXTURE

This fixture insures accuracy and uniformity in grinding National 60° and Acme 29° thread tool bits. With this fixture, bits are right the *first* time . . . thus saving labor. Magnetic chuck convenient but not necessary. Two standard sizes available for tool bits from ⅛" to ⅝". Model A for the mechanic's own tool kit . . . and Model B for the shop. Special Model C for grinding Clark Hole Cutter Blades.

Order from your jobber today or write for Bulletin NED-4

In Canada: DOMINION BEARINGS, LTD., Toronto, Montreal, Winnipeg
Export: THE AMERICAN STEEL EXPORT COMPANY, INC., New York, Los Angeles

Robert H. Clark Company
9330 Santa Monica Boulevard • Beverly Hills, California

▲ Mention Item NED-2109 when writing ▲

New Catalog Shows Blackhawk Wrenches Available Today!—*get extra copies for employees . . .*

It illustrates all the Blackhawk Socket, Open-end and Box Type Wrenches produced today. Also contains helpful dictionary of wrench uses and terms—valuable in training new help. Blackhawk Socket Wrenches have the famous patented Thumb-Release "Lock-On" that prevents accidental disengagement of sockets, handles and attachments.

Send for These TWO Helpful Books

Wrench users, especially inexperienced shop hands, should have copies of the Blackhawk Catalog and the special study of wrenches and how to use them titled, "Meet the Mechlins." Widely used by training instructors. Extra copies of both books sent on request. Mail the coupon now.

BLACKHAWK

BLACKHAWK MFG CO., Dept. W1444, Milwaukee 1, Wis.
Rush _____ copies of Wartime Wrench Catalog, and "Meet the Mechlins."
Name _____
Company _____
Address _____

▲ Mention Item NED-2110 when writing ▲

Industrial Fan Shipments Are Sure to be Slow When Summer Arrives. Order Now! Beat the Hot Weather.

EXHAUST UTILITY COOLBLAST

Hartzell
PROPELLER FAN CO.
DIVISION OF CASTLE HILLS CORP., PIQUA, OHIO
VENTILATION HEADQUARTERS
SALES-ENGINEERING OFFICES IN PRINCIPAL CITIES

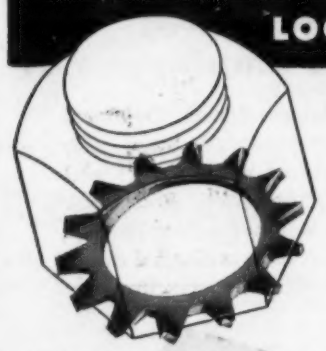
▲ Mention Item NED-2114 when writing ▲

Huge Unitcastings—weighing 6150 lb.—are used in the power mechanism of U. S. Navy Escort Ships. Similarly—in equipment for the Army and Marines—many vital parts that are the guts of fighting units *are Unitcastings!* In thinking of better products for tomorrow—think of Unitcastings for top-quality and dependability! Unitcast Corporation, Toledo, Ohio.

UNITCAST CORPORATION — ALLOY AND CARBON ELECTRIC STEEL CASTINGS

▲ Mention Item NED-2115 when writing ▲

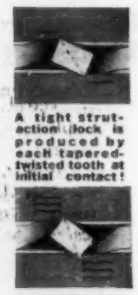
SHAKEPROOF
LOCK WASHERS



ACTUALLY LOCK TIGHTER UNDER VIBRATION!

THE STANDARD OF LOCKING EFFICIENCY!

Powerful multiple tapered-twisted teeth biting into both surfaces provide positive vibration protection for any screw or nut connection!



A tight strut-action lock is produced by each tapered-twisted tooth at initial contact!

Under vibration, spring-tension forces teeth to bite deeper and increases locking power!

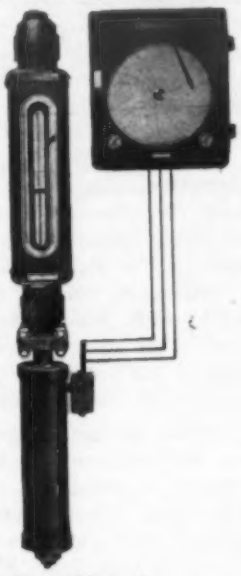
Write for FREE TEST KIT No. 21

SHAKEPROOF inc.
Distributor of Shakeproof Products
Manufactured by ILLINOIS TOOL WORKS
2501 N. Keeler Ave. • Chicago 39, Ill.
Plants at Chicago and Elgin, Illinois

▲ Mention Item NED-2116 when writing ▲

FLOW CONTROLLER

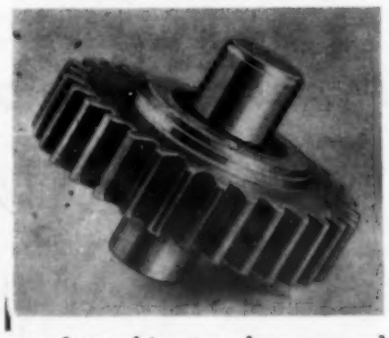
Capable of automatically controlling flow rate of liquids, vapors and gases, Rotamatic flow controller is used in conjunction with Rotameter indicating, recording or totallizing flow meters. Small quantities, corrosive acids and alkalis, opacity, dirt, varying viscosity, pulsations and absence of straight runs of pipe do not present control difficulties with this equipment.



Rotameter, through self-operating induction bridge circuit, transmits its readings to controller which in turn automatically positions pneumatically operated diaphragm motor. Automatic reset and full throttling range supply adjustments to meet most complicated flow problems. Remote reading recorders or indicators can be supplied as desired. Made by **Fischer & Porter Co.**, 928 County Line Rd., Hatboro, Pa.

▲ Mention Item NED-2117 when writing ▲

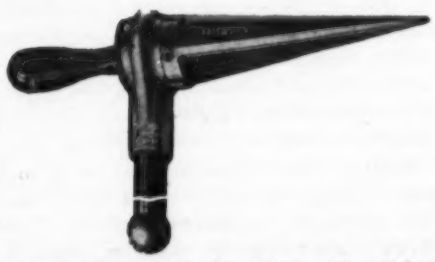
INSULATED GEAR MOUNTING



Pinion gears are insulated from shafting by applying bushing of rubber directly between gear and shaft. This stops transmission of noise, shock, vibration or impact. Either rubber or synthetic can be used and process is claimed to be low in cost. It may be applied to all types of gear drives to reduce wear and decrease noise. Need for milling of keyways or flats is eliminated. No special preparation of gear or shaft is required. Rubber forms mechanical bond when in position to give required torque. Process applied by **Bushings, Inc.**, 3445 W. Eleven Mile Rd., Berkley, Mich.

▲ Mention Item NED-2118 when writing ▲

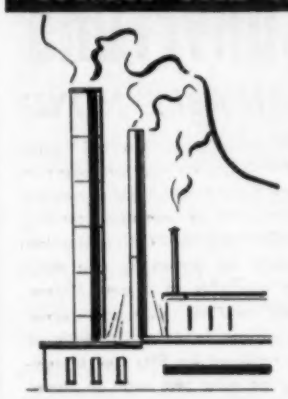
PIPE REAMER



Featuring extra long taper, this Ridgid pipe reamer is claimed to not only avoid flaring, splitting or reducing wall of pipe, but also to cut burr cleanly and easily from inside of pipe or conduit. It is furnished with ratchet handle, or it can be used with ratchet handle of Ridgid No. OOR ratchet threader. Made by **The Ridge Tool Co.**, 125 Ridge Rd., Elyria, O.

▲ Mention Item NED-2119 when writing ▲

WHEN THE HEAT'S ON . . .



CARBOZITE
900° BLACK STACK COATING
gives you
★ Longer Service
★ More Complete Corrosion Protection

Carbozite 900° Black Stack Coating resists corrosive liquids or atmospheres and retains its elasticity and surface uniformity even under violent temperature changes. Designed for stacks, breachings, boiler shells, framework, power piping and numerous other uses where temperatures up to 900°F are encountered.

Available in black only—easy to apply (brush or spray)—dries in 4 to 6 hours. Carbozite Bulletin gives the details. Write for your free copy today!

CARBOZITE CORPORATION
First National Bank Building
Pittsburgh (22), Pennsylvania

▲ Mention Item NED-2120 when writing ▲

Wagner
CHEMICAL-PROOF MOTORS
RESIST THE DAMAGING ACTION OF ACIDS, FUMES, MOISTURE, AND OTHER DESTRUCTIVE ELEMENTS

Below—Moisture proof and dust-tight conduit box—screw-on type.

Right—Special drain plugs in endplates and conduit box provide for the removing of any condensation.

Above—Nipple is solidly welded into side of motor. Flexible compound completely seals lead wire openings.

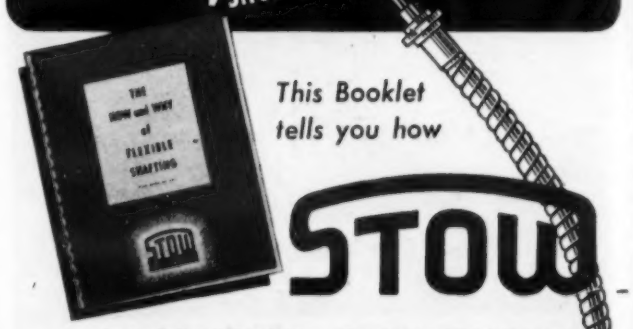
WRITE FOR COMPLETE LITERATURE . . .
For full information on Wagner Chemical-Proof Motors consult the nearest of Wagner's 29 Branch offices, located in principal cities and manned by trained field engineers.

MOTORS
TRANSFORMERS
UNIT SUBSTATIONS
INDUSTRIAL BRAKES
BRAKE LINING

Wagner Electric Corporation
ESTABLISHED 1891
6477 Plymouth Avenue, St. Louis 14, Mo., U. S. A.
ELECTRICAL AND AUTOMOTIVE PRODUCTS — BUY U. S. WAR BONDS

▲ Mention Item NED-2121 when writing ▲

For Your **POSTWAR PRODUCT**
✓Design simplicity
✓Speed and economy of manufacture
✓Streamlined styling



This Booklet tells you how

STOW
FLEXIBLE SHAFTING
can increase Sales Appeal!

● Stow Flexible Shafting enables you to eliminate gears, belts, universal joints, bearings, brackets, from your postwar product—to reduce weight—to turn it out faster, with fewer parts—to increase its saleability by giving it more attractive appearance and greater freedom from service troubles.

● Many manufacturers are now taking advantage of this modern method of transmitting power at an angle, around bends or through congested areas. And in the postwar period, when simplicity and efficiency will be important factors in popular demand, Flexible Shafting will be a competitive weapon to reckon with.

● Get your designers and production engineers to investigate the possibilities of Stow Flexible Shafting for your product. Send for a copy of "The How and Why of Flexible Shafting" for each, and one for yourself. We predict that Flexible Shafting will be the leading topic at your next design conference.

STOW MANUFACTURING CO.
26 Shear St., Binghamton, N. Y.
Inventors and Developers of Flexible Shafting

● STOW Flexible Shaft Mobile Units are speeding production in hundreds of war plants, by taking power tools direct to the job — grinding, sanding, drilling, polishing, without moving the piece or assembly.

▲ Mention Item NED-2122 when writing ▲

BEFORE

The "before" picture would show the motor, running on sleeve bearings, mounted in a horizontal position. From it, a belt drove a jackshaft, which in turn was belted to the 48" rock emery mill.

AFTER

Now look at the "after" picture! The extra capacity of Fafnir Motor Cartridges for *thrust* as well as *radial* loads permitted the motor to be mounted vertically. The jackshaft was eliminated, and the motor belted directly to the emery mill.

Fafnir Ball Bearing Motor Cartridge

Previously, the belts were replaced every 6 months at a cost of $75.00. Since the Fafnir change-over, the same belt has run 2 years—*a belt saving alone of $300.00.* Daily oiling of the jackshaft was eliminated, adding a *lubricant saving.* The drive is much *quieter.* Speed stepped up from 225 to 300 r.p.m. *boosting production.* And the better drive permits the mill to be run tighter *boosting product quality.* The Fafnir Bearing Co., New Britain, Connecticut.

Buy War Bonds and Stamps

FAFNIR
BALL BEARINGS

▲ Mention Item NED-2123 when writing ▲

...for Heavy, Constant use...

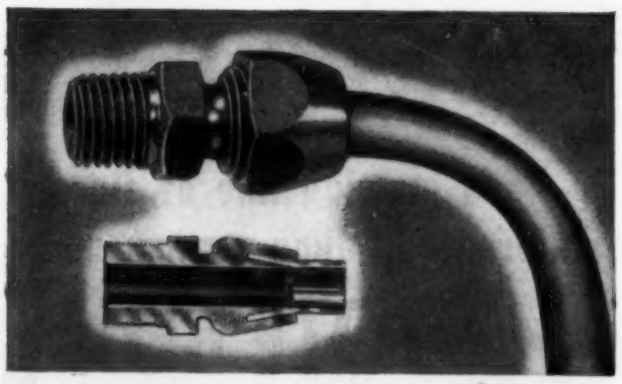
The Barcol OVERDOOR

Motor freight terminals, for instance, have to have doors that will operate easily, close tightly to keep out dirt and drafts, close securely to protect the merchandise, be out of the way when open, and not get stuck or get out of order. The Barcol OVERdoor meets all these requirements, as proved by years of satisfactory service with low maintenance costs in thousands of commercial and industrial installations. For maximum service where it is needed most, use the Barcol OVERdoor.

FACTORY-TRAINED SALES and SERVICE REPRESENTATIVES in PRINCIPAL CITIES

BARBER-COLMAN COMPANY
108 MILL ST. • ROCKFORD • ILLINOIS

▲ Mention Item NED-2124 when writing ▲



SUPERSEAL Tubing Connectors Permit tubing bends close to the fittings

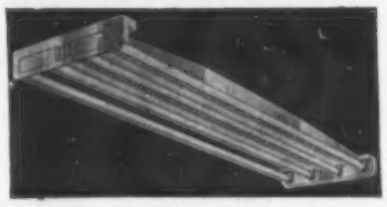
1. Adapted to welded, brazed or seamless steel tubing . . . and all non-ferrous tubing.
2. Long 10° tapered cone provides greater seating area for tubing flare . . . assuring a leakproof joint even under maximum vibration and pressure.
3. All tubing easily flared to SUPERSEAL 10° angle. Even steel tubing can be flared in a single operation.
4. Inside diameter of tubing is uniformly maintained . . . no obstructions at joint.
5. Assemblies can be disconnected and reconnected innumberable times without injuring the fitting or tubing.
6. Fittings available in Steel and Malleable Iron.
7. Used on oil, gas, air, chemical and other lines.

Write for Catalog 1-R, "Grinnell SUPERSEAL Connectors." Grinnell Company, Inc., Superseal Division, Providence, R. I.

SUPERSEAL Flared Fittings by **GRINNELL**

▲ Mention Item NED-2125 when writing ▲

FLUORESCENT LIGHT



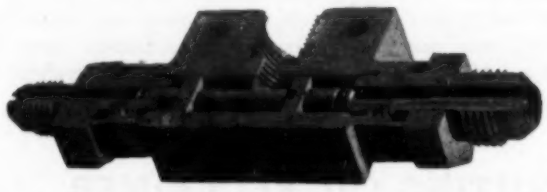
Providing high intensity illumination for offices and drafting rooms, Lightronic exposed lamp type fluorescent luminaire conforms to W.P.B. weight limitations. Full top housing encloses and protects all accessories and wirings. It is equipped with Masonite reflector finished in white enamel to provide 75 per cent reflection of light to working plane. Some upward illumination is provided for softly lighting ceiling.

Designed for close-ceiling or suspended mountings, fixtures are installed as units or end-to-end in continuous runs. They can be furnished for use with either two, three or four 40-watt fluorescent lamps. Either conventional ballast or Super-Powered Quick-Liter ballast which uses no starter switches can be furnished. Made by **The Edwin F. Guth Co.,** 2603 Washington Blvd., St. Louis 3, Mo.

▲ Mention Item NED-2126 when writing ▲

HYDRAULIC VALVE

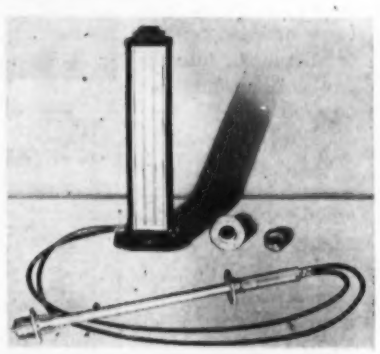
No springs and only one moving part are used in construction of this shuttle valve which is designed for hydraulic power applications. It is claimed to be positive in action



despite simplicity of design. Additional feature is that grinding, honing and seating of valve are not required during operating life. Made by **Electrol, Inc.,** Kingston, N. Y.

▲ Mention Item NED-2127 when writing ▲

AIR ACTUATED GAGE



Adaptable to precision gaging operations on internal bores and external diameters, Metricator is air operated and consists of measuring unit and gaging head. Tolerances of 0.000025 inch can readily be determined. Taper, grooves, out-of-round, straightness and concentricity can be checked readily. Unit regulates air flow and indicates size variations, while gaging head is actual gaging member.

Amplification is 4000 to 1 and variation of 0.001 inch shows on scale as 4 inches. Master gages are applied for setting zero reading prior to production gaging operations. Unit operates on line air pressure of approximately 1 pound per square inch. Integral regulator reduces line pressures of from 30 to 50 pounds down to usable pressure. On high pressure line, auxiliary regulator will be required. Made by **Metrical Laboratories, Inc.,** Dept. 21, 417 Detroit St., Ann Arbor, Mich.

▲ Mention Item NED-2128 when writing ▲

Gatke

High-Heat-Resisting Asbestos

BRAKE BLOCKS
CLUTCH FACINGS
FRICTIONS

Made for ALL Requirements

Engineered to do the job RIGHT

Just tell us What You Need!

Gatke Brake Blocks and Frictions are made in all shapes and sizes to machined accuracy.

Gatke Clutch Facings — Made in Disc, Gear-Toothed and Cone Types for all applications—Large or Small.

Gatke Heavy Duty Woven Brake Lining

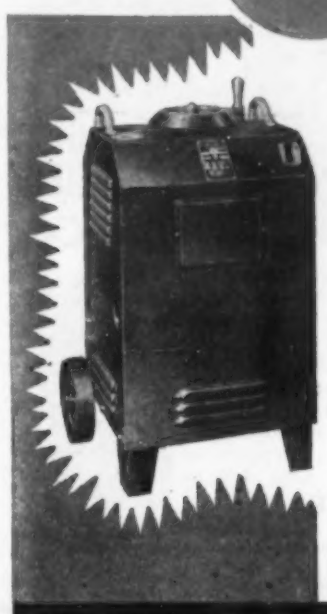
Dura-Blok Wire-Back Moulded Brake Lining

GATKE CORPORATION
220 N. LaSalle St. Chicago

▲ Mention Item NED-2129 when writing ▲

Announcing

NEW G-R WELDERS FOR 1944



FOR 1944, G-R adds to its well-established line of welders four "C" models, with capacities from 135 to 300 amperes.

HIGHER POWER FACTOR... Lower input current. Smaller primary service requirements permit use of existing critical power. Power factor correction, standard equipment on all "C" models.

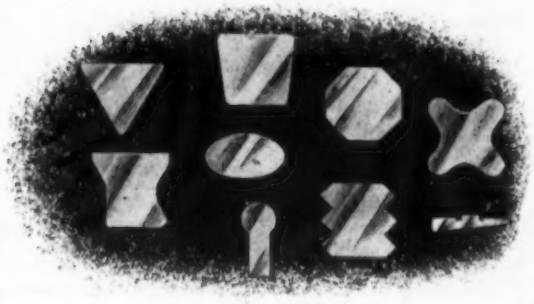
EXTRA-DUTY INSULATION... All "C" models Class-B equipped (glass and mica insulation) to master adverse welding conditions.

Supplied with the famous G-R Flux diversion type transformer, providing maximum flexibility, stepless heat control, low maintenance cost, safety for the operator.

GLENN-ROBERTS COMPANY
1009 FRUITVALE AVENUE, OAKLAND, CALIFORNIA
2107 ADAMS STREET, INDIANAPOLIS, INDIANA
P. O. Box 1814, Washington, D. C.

▲ Mention Item NED-2130 when writing ▲

PAGE *Shaped* WIRE



SHAPED wire belongs in production that is coming with reconversion—belongs as never before.

The Shaped Wire you plan to use may be Carbon Steel, Armco Ingot Iron or Stainless Steel. Whatever it may be, think of **PAGE**—for wire has always been the business of PAGE. And it has been part of our business to develop Shaped Wires to meet a wide range of special manufacturing requirements—in end section areas up to .250" square and widths up to 3/8 inches.

• • •

You will find it very much worth your while to discuss your planned use of Shaped Wire with PAGE possibly well in advance of the time of re-conversion. We may be able to help you save many precious production hours and reduce production costs.

PAGE STEEL AND WIRE DIVISION
Monessen, Pa., Atlanta, Chicago, Denver, Los Angeles
New York, Pittsburgh, Portland, San Francisco

In Business for Your Safety

ACCO
AMERICAN CHAIN & CABLE COMPANY, Inc.
BRIDGEPORT • CONNECTICUT

▲ Mention Item NED-2131 when writing ▲

NEW.. "ONE-INCH" VARIABLE DIMMING PILOT LIGHT ASSEMBLIES by DIALCO

To regulate the intensity of light, this new Dialco unit *has a superior mechanical shutter built into the knurled head.* This Vari-Dim Jewel Head assembly can also be readily applied to any of the CS series of Pilot Lights listed in our 24-page Catalogue No. 43. Write for a copy.

Plus LAMPS... To help speed production, Dialco offers Pilot Lights completely assembled with G.E. or Westinghouse Lamps—any type or voltage. Samples submitted on request.

DIAL LIGHT CO. of America, Inc.
900 BROADWAY • NEW YORK 3, N. Y.
Telephone: ALgonquin 4-5180-1-2-3

▲ Mention Item NED-2132 when writing ▲

H&H RECIPROCATING ACTION PORTABLE Electric TOOL

Motion is "in and out"—not spinning or rotary. Tool is portable—light weight—carry it anywhere—easy to handle. Self contained. Ready to plug into any 110 volt electric outlet. Use it to work on any metal, wood, plastic or other materials that may be filed, sawed or polished. Delivers 1000 strokes per minute, much faster than hand methods. Complete line of files, scrapers, hones and other accessories available. Regularly used in America's largest plants and in many small shops too.

Send for catalog

H&H RESEARCH CO.
429 MARQUETTE BLDG • DETROIT 26, MICH.

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The Answers to your Motor Problems!

FULLY DESCRIBED IN A NEW, FREE BOOKLET

SHIPMENT NOW! Ample stock on all types of integral motors on hand as this goes to press. Wire or phone your inquiry.

Read the interesting, 20-page story of R & M Uni-Shell Integral Horsepower Motors—the only complete line in which all types in any one frame size are interchangeable and similar in appearance. Length and diameter of the shell, head fit, bolt circle holes, base and conduit mounting are identical for all. Where one type can be mounted, so can any.

MAIL THIS COUPON!

ROBBINS & MYERS, INC.
Motor Division, Springfield, Ohio

Send me the free book about Uni-Shell Integral Horsepower Motors.

Name..... Dept.....
Firm.....
Street.....
City & State.....

▲ Mention Item NED-2134 when writing ▲

SMALL AUTOCLAVE

Combining in design, construction and equipment all functions and features of large high pressure units, this 1-gallon autoclave is tested to 1000 pounds per square inch pressure. Jackets are built for 125-pound steam pressure. Unit is available with jacket for steam or oil heating, or with shroud or stand for gas firing.

Charcoal cast iron body has high degree of corrosion resistance. Special alloy units can be furnished for special service conditions. Stirrer of horseshoe shape fits closely to hemispherical contour of bottom. Cast cover is held in place by forged T-bolts which fit into slots in cover and body.

Stirrer is driven by machine cut bevel gears at half the speed of pulley or crank drive shaft. Heavy duty ball bearing between gear and vertical bearing takes all thrust of stirrer shaft. Standard equipment includes safety valve with ball and lever, pressure gage, thermometer well, monel stirrer shaft, extra gaskets and concentric gas burner, latter being extra. Made by **Industrial Machinery Co.**, Bloomfield Bank & Trust Bldg., Bloomfield, N. J.

▲ Mention Item NED-2135 when writing ▲

CUTTING OIL RECLAIMER

Savings of as high as 85 per cent of oil heretofore discarded are claimed for this line of cutting oil recovery plants. Fig. 1 shows assembled unit for extraction of oil from chips, filtering and sterilizing the recovered oil. Fig 2 is diagram of layout.

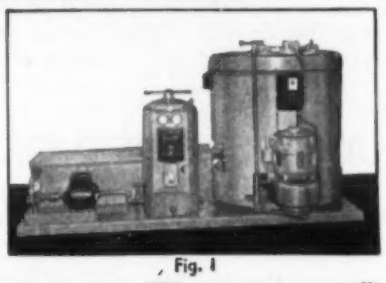

Fig. 1

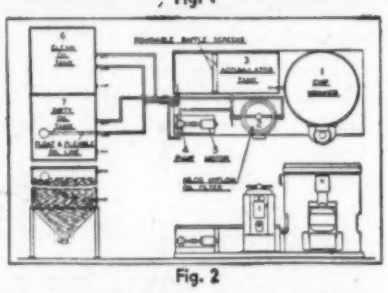

Fig. 2

Chips are placed in wringer (1). Extracted oil flows into accumulator tank (3) and then flows through removable baffle screens. Motor driven pump (4 & 5) picks up oil and forces it through Hilco Hyflow oil filter (2) which is equipped with electric heaters and contains filtering material. Here oil is filtered clean and is sterilized before passing through to clean oil tank (6).

Oil may be taken from accumulator tank and delivered for storage in dirty oil tank (7). Motor driven pump may be used for dispensing clean oil as required. It is further claimed that oil-free chips are more acceptable to smelters and bring higher scrap prices. Made by **The Hilliard Corp.**, 40 W. Fourth St., Elmira, N. Y.

▲ Mention Item NED-2136 when writing ▲

DIAMONDS for Victory

BIG-HED-NIBS
LOC-KEY-SET

- Three grades of diamonds. Common Quality $12 per karat. Medium quality $24 per karat. Select quality $48 per karat. (Contour template diamonds supplied only in Medium and Select quality.)

All diamond sizes ¼ to 10 karat are nib mounted for immediate shipment . . . Billed subject to approval. Specify quality of diamond wanted. We recommend a minimum size of one karat for each 6" diameter of grinding wheel. (24 hour resetting service, $1.00 postpaid.) Grinders instruction card free. *Send for Catalog.*

RE-SET-ABLE

Cooler dressing
Closer Tolerances
Micrometer Accuracy

Because: Wing key heat distpatim and absolute diamond lock nib.

The Most Complete and Up-to-the-Minute Line of Diamond Tools. Distributed thru Mill Supply Jobbers.

DIAMOND TOOL COMPANY, Not Inc.
Sheldon M. Booth, Pres.
938 E. 41st Street CHICAGO, ILL.

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WELDON ... OBER

Bright

THE MATERIAL . . . . SYNTHE... C R...

THE MEDIUM . . .

Ask your dealer for prices and Applications ... Ask Brightboy field representatives or Service Department about saving time-proving quality—in your abrasive finis...

BRIGHTBOY INDUSTRIAL DIVIS...
Weldon Roberts Rubber Co.
Newark 7, N. J.

▲ Mention Item N... when w...

NEW!

This attractive bulletin contains 24 pages of data covering roller and frame sizes, roller and bearing construction, curves, supports, special devices, couplings, light wheel units, ball transfers, and typical installations. It can be of considerable help in planning Gravity Roller Conveyer applications. Your copy will be sent immediately upon request.

MATHEWS CONVE... C...

▲ Mention Item NE... when wr...

Announcing

a newcomer to a growing line of fine materials handling equipment

the TOTE BOX

ORIGINALLY designed for one of America's largest aircraft producers to move and store small screw machine parts. Can be used for short spottings by hand, or for long hauls and tiering with fork lift truck.

Size—18" x 24" x 12". Body of truck—16 ga. steel. All spot-welded. Provided with tiering channels, two 4" stationary casters, and one 4" swivel caster. Capacity—500 lbs.

The UNION META...

▲ Mention Item NE... writi...

OBERTS
ht boy
REG. U.S. PAT. OFF.

C RUBBER....

Brightboy

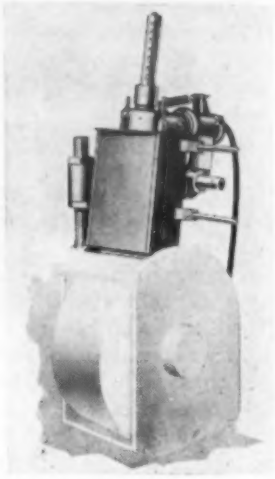
Rubber gives RESILIENCY—relative softness that controls and "cushions". Rubber-cushioned BRIGHTBOY applies this resiliency—combines rubber and abrasive—for close-tolerance

DE-BURRING
FINISHING • POLISHING

saving countless operations

when writing ▲

BUFFING COMPOUND FEEDER



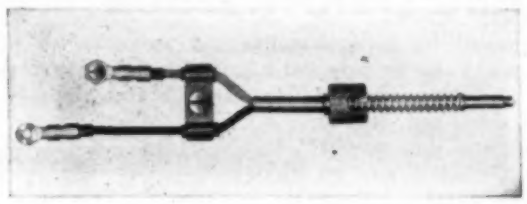
Usable on any type of buffing or polishing machine, this Auto-Doper cylindrical and rectangular composition applicator is automatic and air operated. It is only necessary to change composition housing when changing from round to rectangular bars. Frequency of operation is controlled by air valve actuated by cam, electrical timer or foot valve.

Uniform application of composition is claimed to assure high quality of work and minimize composition cost. Made by **Hammond Machinery Builders, Inc.**, 1623 Douglas Ave., Kalamazoo 54F, Mich.

▲ Mention Item NED-2141 when writing ▲

ENGINE THERMOCOUPLES

Of embedded type, this cylinder head insertion thermocouple is easily inserted into strategically located well on aircraft or other engines. Overheating caused by poor air



flow, local lean mixtures and other causes are readily determined. This quick-disconnect bayonet unit has been released to aviation industry on royalty free basis. Each unit is precision built and may contain single element or several units woven as integral part of harness for compact multi-cylinder installation. Made by **The Revere Co.**, Dept. ED, P.O. Box 304, Wallingford, Conn.

▲ Mention Item NED-2142 when writing ▲

SMALL TOGGLE CLAMP

Useful in spots where overhead space is limited, No. 207-TS or No. 207-TU light duty toggle clamps provide positive clamping action. T-handle offers firm grip which would be impossible with shortened straight handle of conventional type. Clamp is available with straight solid work bar or U-shaped work bar as shown. In latter model, retaining bolt can be set at any desired distance from handle, permitting adjustments to job requirements. Clamp measures 3⅞ inches from end of work bar to end of base and 4 inches high when locked. Made by **Detroit Stamping Co.**, 360 Midland Ave., Detroit 3, Mich.

▲ Mention Item NED-2143 when writing ▲

Reg. U. S. Pat. Off.

UNBRAKO

HOLLOW SET SCREWS with *"KNURLED"* points are SELF-LOCKING

Pat'd and Pats. Pending

Just tighten "Unbrako" Self-Locking Hollow Set Screws in the usual manner, and the knurled points "dig-in" and prevent the screws from "backing out". A sure way to avoid breakdown and maintenance costs due to ordinary set screws working loose is to use "Unbrako" Self-Locking Screws. Sizes from No. 4 to 1½" diameter. Write for "Unbrako" Catalog.

• Knurling of Socket Screws originated with "Unbrako" years ago.

Over 40 Years in Business

STANDARD PRESSED STEEL CO.
JENKINTOWN, PENNA. BOX 581

BRANCHES
BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO

▲ Mention Item NED-2144 when writing ▲

Mechanical Alternator FOR CONDENSATE PUMPS

CLASS 9049

The **Class 9049 Mechanical Alternator** provides a simple and positive means of mechanically alternating the operation of two condensate pumps in a duplex system. The function of the device is to provide alternate cycles of operation to assure even wear of the pumping units in such a system. It thus eliminates the evils of long stand-by for one of the two pumping units. The Class 9049 device further provides the additional function of starting the "second" pump in cases where extra capacity under peak conditions is required.

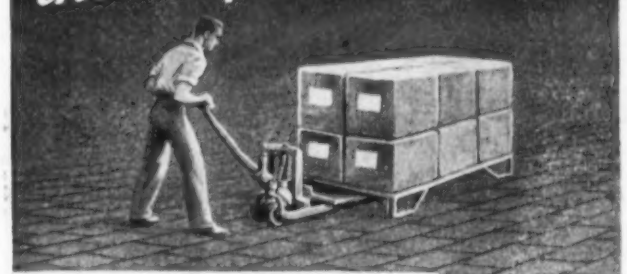
ELECTRICAL RATINGS

Voltage	Single Phase A.C.	Polyphase A.C.	D.C.
110V.	1 H.P.	2 H.P.	½ H.P.
220V.	2 H.P.	3 H.P.	½ H.P.
550V.	2 H.P.	3 H.P.	.....
32V.	.....	.....	¼ H.P.

REGULATOR DIVISION
SQUARE D COMPANY
DETROIT • MICHIGAN

▲ Mention Item NED-2145 when writing ▲

This FLOOR helps solve the Manpower Problem

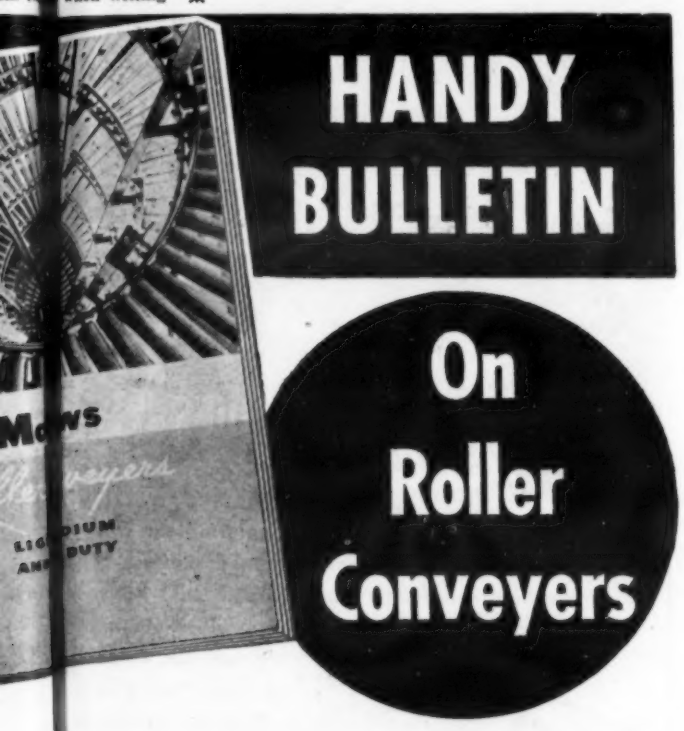


WITH a smooth, fast-trucking floor of Armstrong's Industrial Asphalt Tile, work is easier—goes faster. One man can handle more work and extra labor can be put on other jobs. Accidents are reduced, too, because this floor prevents slipping, is nonsparking, and fire-resistant. Quickly installed, it's a rugged floor that will last for years.

FREE TEST OFFER. We'll install 100 sq. ft. free in any area you designate. For free floor or booklet, "Armstrong's Industrial and Conductive Asphalt Tile," write to Armstrong Cork Company, Resilient Tile Floors Department, 6604 New Street, Lancaster, Pa.

ARMSTRONG'S
INDUSTRIAL ASPHALT TILE

▲ Mention Item NED-2146 when writing ▲



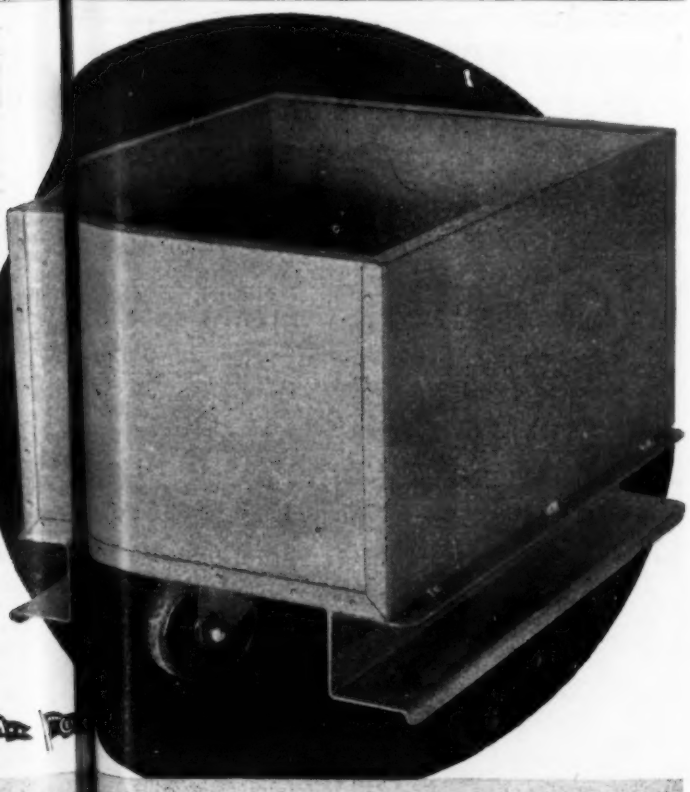
HANDY BULLETIN

On Roller Conveyers

THEWS CONVEYERS FOR MECHANIZED PRODUCTION

VER COMPANY ELLWOOD CITY PENNSYLVANIA

Item NED when writing ▲



TA Manufacturing Company
CANTON 5, OHIO

Item NED writing ▲

Enclosed Design

• PROTECTS LATHE OPERATOR
• KEEPS VITAL PARTS CLEAN
• MAKES BELT CHANGING EASY

The Cone Pulley Guard on Logan Lathes completely covers the countershaft, headstock and back gears. Motor drive belt and change gear assemblies are also enclosed. As a result, the lathe operator is protected from accidental catching of clothes or fingers in gears or belts.

Belt changing, too, is easier, safer, because raising the Cone Pulley Guard automatically moves the countershaft toward the headstock, releasing belt tension . . . an exclusive, patented Logan feature. Write for full catalog information on all the advanced design features of all Logan Lathes.

LOGAN ENGINEERING CO. • CHICAGO 30, ILLINOIS

▲ Mention Item NED-2147 when writing ▲

ANYONE WHO CAN SUBTRACT *Can Read it*

By subtracting the previous reading on the ADSCO Rotary Condensation Meter, you have the amount of steam consumed for the current period.

This low cost meter will enable you to arrive at accurate steam costs for separate buildings, departments, processes — enable you to render proper bills, if you sell steam to others.

Tell us the maximum pounds of condensate per hour or the square feet of equivalent direct radiation in the building or department to be metered, and we will tell you how surprisingly little it will cost to put your steam consumption on an accounting basis. Also ask for bulletin 35-80D.

AMERICAN DISTRICT STEAM COMPANY
NORTH TONAWANDA, N.Y.
MAKERS OF "UP-TO-DATE" STEAM LINE EQUIPMENT FOR OVER 60 YEARS

Meter counter records in pounds of condensate on a non-fogging easy to read dial.

it doesn't take an engineer to read it.
ADSCO ROTARY CONDENSATION METER

▲ Mention Item NED-2152 when writing ▲

HOLTITE Fastenings are produced with the uniform precision of small tools to effect time-saving application and faultless performance in war weapon assemblies .....

BUY MORE BONDS

CONTINENTAL SCREW CO. NEW BEDFORD, MASS., U.S.A.

▲ Mention Item NED-2153 when writing ▲

How to *EXPEDITE* Your Truck Fleet Maintenance Cleaning!

In the NEW Oakite Automotive Servicing Manual you will find described FAST-WORKING Oakite materials and techniques for expediting such important maintenance jobs as:

degreasing repair parts
reconditioning clogged radiators
steam cleaning motors and chassis
deodorizing truck interiors
keeping floors, work pits clean
safely washing truck bodies

It contains 36 pages of shop-proven data that will help you put these tasks on a faster, easier, more economical basis. Write for your FREE copy TODAY!

OAKITE PRODUCTS, INC., 32G THAMES ST., NEW YORK 6, N. Y.
Technical Service Representatives in All Principal Cities of the United States and Canada

OAKITE MATERIALS—METHODS—SERVICE — Buy Bonds for Victory — CLEANING FOR EVERY CLEANING REQUIREMENT

▲ Mention Item NED-2154 when writing ▲

TRUNNION BOX AND TRUCK

Square in shape, this trunnion box with its trunnion hand truck is adaptable to wide range of materials handling operations. Box is made of 12-gage steel, welded throughout and water tight. It measures 18 x 18 x 24 inches high and has steel reinforcing plates at trunnions. Truck is made of heavy bar stock with tubular handles. Roller bearing wheels are 10 x 2½ inches.

Operator pushes truck to position where forked side arms engage in trunnions. Pushing down on truck handles picks box up off floor and makes wheeling easy. Single truck will handle any number of boxes when used for hauling stock or transporting work in process between operations. Trunnion box may be handled also with sling or overhead hoist. Made by **Palmer-Shile Co.**, 7116 W. Jefferson Ave., Detroit 17, Mich.

▲ Mention Item NED-2155 when writing ▲

PIPING STRAP WRENCH

Intended for better handling and protection of polished nickel and chrome pipe and tubing, this Ridgid strap wrench is made with one-piece I-beam handle having handy hang-up hole in one end. Easy to attach and use, wrench affords positive grip on smooth surfaces without marring. Strong webbing strap is easily removed for replacement by pushing out pins held in spring clips. Wrench is available in No. 2 size for ⅛ to 2-inch diameters with 17-inch strap and in No. 5 size for 1 to 5-inch diameters with 30-inch strap. Made by **The Ridge Tool Co.**, 125 Ridge Rd., Elyria, O.

▲ Mention Item NED-2156 when writing ▲

FLUORESCENT FIXTURE

Of same basic design as recently announced 40-watt models, this model HF-235R industrial fluorescent fixture uses two 100-watt lamps and is intended for areas where high levels of illumination are required. Suited to individual or continuous-row mounting, unit may be suspended by direct chain, direct conduit or messenger cable, or surface mounted with bolt or lag screw.

Top housing encloses ballast and complete mounting flexibility is afforded by ½-inch knockouts located on 24, 30, 36 and 47¾-inch centers. Chain hanging brackets are built into top housing. Single piece non-metallic reflector board is finished in baked enamel and has reflectivity of 86 per cent. Maintenance is facilitated by locating starters between lamps and by use of quarter-turn latches to remove reflectors. Made by **Sylvania Electric Products Inc.**, Dept. FWM, 60 Boston St., Salem, Mass.

▲ Mention Item NED-2157 when writing ▲

18 WAYS TO SAVE TIME & MONEY!
with the
Mead Industrial Burring Machine

FOR METAL - PLASTIC - WOOD

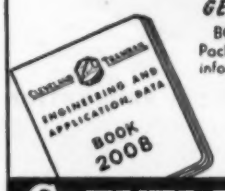
New circular explains, illustrates 18 ways in which the Mead Industrial Burring Machine saves time and money—also contains special Grit Guide. Every industrial plant needs this "Jack Of-All-Trades" machine. Your burring can be done in "free time"—install these machines by every machine tool which leaves burrs. Grinds, finishes both outside and inside cut-out openings. Immediate delivery in most cases. Write for the informative Money-Saving circular now.

MEAD SPECIALTIES COMPANY
15 SO. MARKET STREET, DEPT. 44-N, CHICAGO 6, ILL.

▲ Mention Item NED-2159 when writing ▲

STORE and HANDLE DIES *This Easy Way*

A vexing die storage and handling problem was solved by a shelf arrangement, illustrated, and use of a simple hand-propelled crane with electric hoist. Dies are stored in numbered positions which are indexed. The crane makes it easy to reach every die.



GET THIS BOOK!
BOOK No 2008
Packed with valuable information

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
1143 East 283rd St *Wickliffe, Ohio*

CLEVELAND TRAMRAIL

▲ Mention Item NED-2160 when writing ▲

They can 'take it

Size 534 Ingersoll-Rand Impact Wrench running nuts on one-inch bolts during installation of drive sprocket on an M-4 tank.

Tanks must be durable and tough without sacrificing maneuverability and power. The tools that help build these giants must measure up to the same standards.

Yes—AIR tools can take it! The simple design of AIR tools permits a durable, lightweight unit that gives reliable service and longer tool life. For instance ... air motors can be instantly started, stopped, or reversed ... overloading will merely stall the tool with no injury to the air motor or other vital parts ... many air tools do not require complicated gearing and seldom need multi-step reductions ... air tools run cool ... the exhaust supplies ventilation when the operator is working in hot, dusty atmosphere ... air tools are protected from dirt.

Freedom from breakdowns keeps production on the go and naturally lowers maintenance. Choose from the complete line of Ingersoll-Rand AIR tools. And ... to operate these tools and furnish air for countless other uses, Ingersoll-Rand offers ever size and type of compressor.

Uninterrupted Service Assures More Production

Ingersoll-Rand
11 BROADWAY, NEW YORK 4, N. Y.

COMPRESSORS • TURBO BLOWERS • ROCK DRILLS • AIR TOOLS • CENTRIFUGAL PUMPS • CONDENSERS • OIL AND GAS ENGINES

▲ Mention Item NED-2158 when writing ▲

FOR LOW-TEMPERATURE TESTING AND CONDITIONING

Constant Temperature
AMINCO **SUB-ZERO CABINET**
(Dry Ice Cooled)

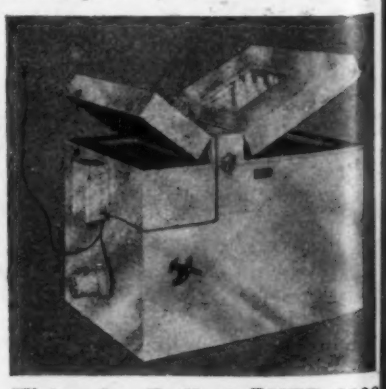
Two Temperature Ranges:
0° to—100° F. 220° F. to—100° F.
Constancy: ± 1/2° F.

For testing instruments, aircraft equipment, and many materials to determine their performance, durability, etc. at low temperatures.

For chilling metals and metal parts to produce desired characteristics, such as chilling aluminum rivets to retard age hardening and make them soft enough to permit easy driving; also chilling parts for expansion fitting, etc.

Ideal as a food-freezing pilot plant.

Working chamber, 24x24x24 in.



Write for Bulletin NED-2120

AMERICAN INSTRUMENT CO.
8010 GEORGIA AVENUE • SILVER SPRING, MARYLAND

▲ Mention Item NED-2161 when writing ▲

Geared for WAR today —or PEACE tomorrow

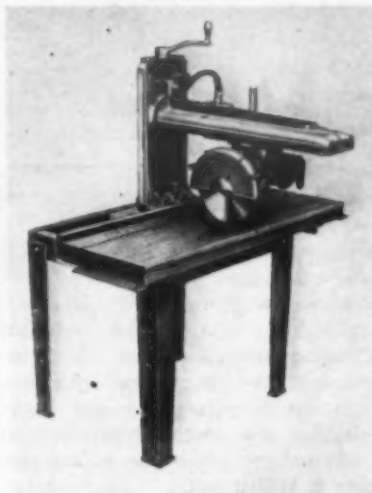
Through two wars and for almost half a century, The Alexander Milburn Company has been serving Government and Industry. Milburn Equipment may be relied upon for superior, dependable service under stress of the most adverse conditions. Write for Catalog.

The ALEXANDER MILBURN Company

1423 W. BALTIMORE ST., BALTIMORE, MD.

▲ Mention Item NED-2162 when writing ▲

WOODWORKING SAW



Incorporation of Angulator with two adjustable stops is claimed to improve performance of this No. 1 radial saw. Stops position machine to alternately make any two angle cuts on piece of material before removing it from table. With this machine, motor moves back and forth in arm while material remains stationary on table. Saw is fitted with degree scale and lock pins to locate cut-off position and commonly-used angles.

Column, arm and motor are radially mounted. They each rotate full 360 degrees and may be locked at any required angle. Angulator includes rotating fence so that carpenter's square may be used to set up stops for locating plate and ridge-angle cuts for rafters.

Toothed saw blades are available for cutting wood and nonferrous metals such as aluminum and copper. Abrasive cut-off wheels are available for cutting extruded sections of hardened steels, mycalex, glass and other ferrous or refractory materials. Made by J. D. Wallace & Co., 145 S. California Ave., Chicago, Ill.

▲ Mention Item NED-2165 when writing ▲

Accurate, easy-to-read photo-exact copies of orders, letters, blueprints, drawings, accounting records, technical data or sketches reproduce originals in detail. Eliminate errors in copying that cause misunderstandings and delays! Make photo-copies for all departments and branches. Even blueprints copied without tracing. Any girl or boy quickly makes A-PE-CO photo-copies of anything written, printed, drawn or photographed. No technical training needed. A-PE-CO is indispensable in thousands of America's industries. You can use it to avoid mistakes and save time. *Write for descriptive folder.*

AMERICAN PHOTOCOPY EQUIPMENT CO.
2849 N. CLARK ST. Dept. BB-44 CHICAGO 14, ILLINOIS
Representatives in Principal Cities. In Canada: Railway & Power Engineering Corp., Ltd.

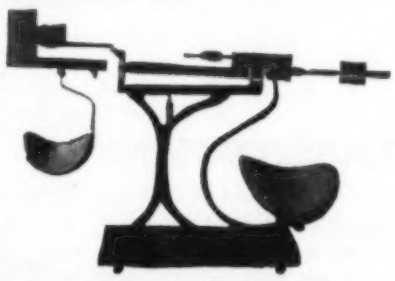
A-PE-CO "Photo Exact" ..COPIES MADE FAST BY ANYONE, ANYTIME

PHOTO-COPYER $55.00 COPIES UP TO 18" x 22"

▲ Mention Item NED-2168 when writing ▲

COUNTING SCALE

Counting of large numbers of small parts with speed and precision is facilitated by use of Micro-Counter. This counter consists of ratio scale built to laboratory balance and accuracy. When scale is in balance, number of objects in counting pan bears predetermined ratio to number of objects in sample pan. Device is time saver in dispensing small parts or in taking inventory. It can also be used at counting stations to count pieces in short time and with greater accuracy than by hand.



Scale has accuracy of 1/1000th of ounce which is far less than individual weight of objects customarily counted. Thus accuracy of count is limited only by any deviation in average weight of articles being counted, a deviation held to close limits by fact that plus and minus errors cancel each other in accordance with law of averages.

In operation parts to be counted are placed in counting pan and brought to balance with counted number of parts in sample pan. Magnetic damper brings scale to quick stop in spite of its sensitivity. Magnifying glass permits quick and accurate reading of balance indicator. Thousands of parts can be counted in short time and with greater accuracy than by hand. Made by John Chatillon & Sons, 93 Cliff St., New York, N. Y.

▲ Mention Item NED-2166 when writing ▲

KEEP MATERIALS MOVING!

Avoid bottle necks in your production line. Don't waste manpower on horsepower jobs. For loads of one ton or under use the Truck-Man. Easy to handle. Operates in narrow aisles. Turns in its own length. Dependable gasoline power. Convenient hydraulic lift. Sturdy construction.....*Send for literature.*

Priced at but $600.00 F. O. B. Jackson, Michigan

truck-man a product of YARD-MAN, INC. 1414 WEST GANSON JACKSON · MICHIGAN

▲ Mention Item NED-2163 when writing ▲

A 5/8" WILL DO IT--

--with CHICAGO "SAFETY PLUS"

CHICAGO "SAFETY PLUS" Socket Head Cap Screws of a given diameter can be specified instead of hexagon head or fillister head cap screws of larger diameters. Higher actual tensile is obtained and fewer screws are required. A 5/8" diameter CHICAGO "SAFETY PLUS" Socket Head Cap Screw, for example, is more than 38% stronger than a 3/4" diameter standard hexagon head or fillister head cap screw.

In every case a smaller diameter can be utilized with an accompanying increased factor of safety.

ARMY E NAVY

Chicago "Safety Plus" Products are sold only thru Authorized Distributors

THE CHICAGO SCREW CO.
ESTABLISHED 1872
1026 So. HOMAN AVENUE CHICAGO, ILL.

▲ Mention Item NED-2169 when writing ▲

PROFIT BY "ABRASIVE" SUPERIORITY

For example, Abrasive Company Resinoid-Bonded Cut-Off Wheels—made right to cut right—prove you can obtain *extraordinary* production at *ordinary* cost! Let our Service Engineers solve your Grinding Problems. Your inquiry will receive prompt and friendly response

COMMANDING QUALITY

TRADE ABRASIVE MARK REGISTERED

OUTSTANDING RESULTS

ABRASIVE COMPANY
Tacony and Fraley Sts., Philadelphia 37, Pa.
DIVISION OF SIMONDS SAW AND STEEL CO.

▲ Mention Item NED-2164 when writing ▲

HANSEN one-hand TACKER

ZIP! Zip! Fast as you grip—the Hansen one-hand Tacker drives two-pointed Tackpoints—for all types of fastening, tacking, assembly, gluing jobs. Speeds production, assembling, packing, shipping. Self-contained—ready for instant, continual use. One-hand operation. Compact. Light weight. Easily portable.

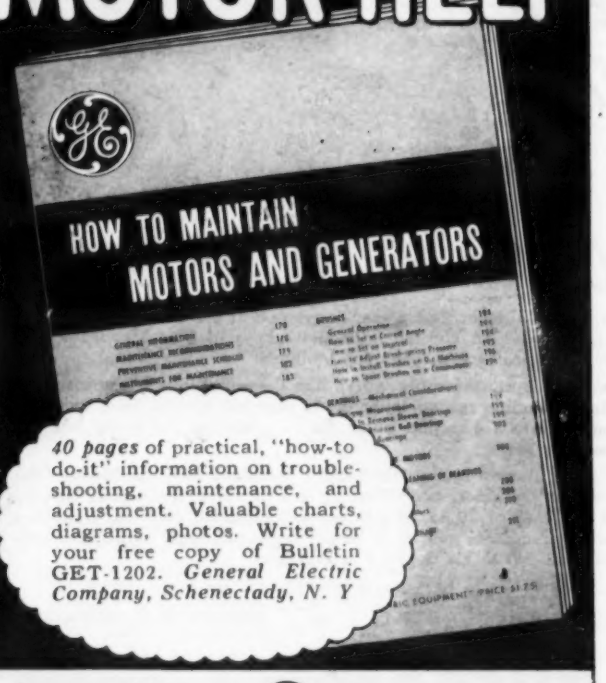
Conserves essential materials. Tacks plywood for constructing airplanes, trainers, gliders, landing barges, speedboats, radio equipment housings, etc. Tacks non-vital war material to replace steel in air-conditioning jobs, conversion of attics into living space, etc.

Make effective use of this rapid, time-, labor-, and material-saving Hansen Tacker, in solving problems relating to scarcity of materials and faster production. Get details. SEND FOR FOLDER.

TACKERS HANSEN STAPLES A.L. HANSEN MFG. CO.
5164 RAVENSWOOD AVE. CHICAGO 40, ILL.

▲ Mention Item NED-2167 when writing ▲

MOTOR HELP



40 pages of practical, "how-to do-it" information on trouble-shooting, maintenance, and adjustment. Valuable charts, diagrams, photos. Write for your free copy of Bulletin GET-1202. *General Electric Company, Schenectady, N. Y*

GENERAL ELECTRIC
750-229-8030

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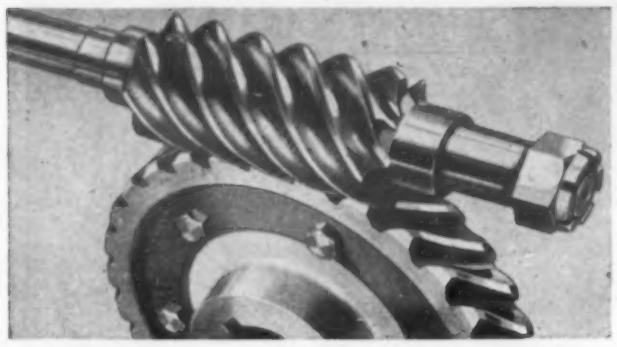


"Not one penny for repairs"

The operating executives in a number of America's largest corporations report on the performance of their Cleveland Worm Gear Speed Reducers—some installed as early as 1920:

"*More than 20 years*—not a nickel's worth of repairs" • "*12 years—300 days a year*—still running like new" • "*Every hour of the year;* no attention except to check lubrication" • "*Over 15 years* without inspection" • "*Since 1929* on our conveyors. No replacements" • "*Installed in 1924,* still going strong."

Thousands of Cleveland Drives are operating today with never an hour of shutdown time—never a cent for parts replacement. Write "Cleveland" into *your* specifications!

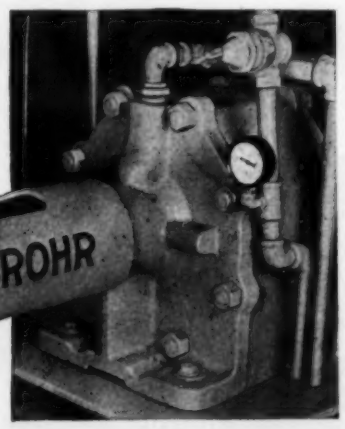
THE CLEVELAND WORM & GEAR COMPANY
3283 East 80th Street • Cleveland 4, Ohio
Affiliate: The Farval Corporation, Centralized Systems of Lubrication
In Canada: PEACOCK BROTHERS LIMITED

CLEVELAND WORM GEAR Speed Reducers

▲ Mention Item NED-2171 when writing ▲

▲ Mention Item NED-2172 when writing ▲

NOPAK Air Cylinder provides Pneumatic Power for Beading Press.



Beading Time Cut 95%

A novel tube-beading press, developed at the Rohr Aircraft Plant, puts a bead on chrome or monel tubing in 2 to 3 seconds . . . 20 times faster than previous methods.

Its unique die-assembly works like the collet in a screw machine. An expansible rubber inner die is inserted into the tube end, and pulled into a 4-section outer die . . . forcing the metal into the beading cavity.

Pulling power is furnished by a Standard NOPAK Model "A", 12" Air Cylinder, controlled by a foot valve. Tube-ends beaded at the rate of 20 to 30 per second establish NOPAK Cylinders as a dependable source of power for continuous, high-speed production. Write for detailed information.

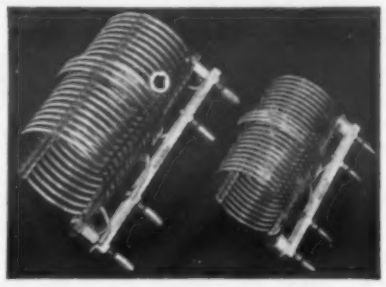
GALLAND-HENNING MFG. CO.
2755 SOUTH 31st STREET • MILWAUKEE 7, WISCONSIN

Representatives in Principal Cities

NOPAK VALVES and CYLINDERS
DESIGNED for AIR or HYDRAULIC SERVICE

▲ Mention Item NED-2173 when writing ▲

ELECTRONIC HEATING COILS

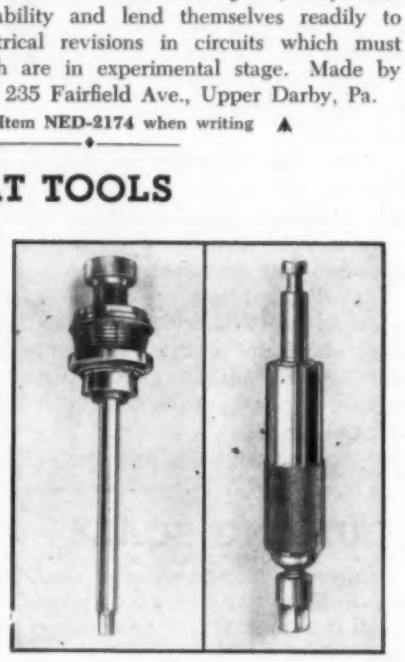


Electronic heating applications requiring up to 1 kilowatt may be performed with this line of standard heavy duty heating coils. Company also offers specialized facilities for production of non-standard types for practically any heating requirement. Featuring Air Wound design without solid winding form, coils are light in weight, adaptable to numerous mounting arrangements and have low dielectric loss.

Because they are wound with uniform pitch, they offer utmost design adaptability and lend themselves readily to mechanical and electrical revisions in circuits which must be adjusted, or which are in experimental stage. Made by **Barker & Williamson,** 235 Fairfield Ave., Upper Darby, Pa.

▲ Mention Item NED-2174 when writing ▲

VALVE SEAT TOOLS



Valve seat inserts are readily removed from aircraft and automobile engines with valve seat removing tool shown at left in illustration, while worn valve stem bushings are removed by bushing remover, at right in illustration. Evenly distributed steel jaws of seat remover give safe, positive grip on insert. Both insert and tool are delivered without fracture. Made by **Invincible Tool Co.,** 6217 Empire Bldg., Pittsburgh 22, Pa.

▲ Mention Item NED-2175 when writing ▲

TRANSFORMERS

Able to withstand great shock, according to manufacturer, transformers incorporating new method of attaching cases which eliminate any strain on solder seal have passed Signal Corps 5-cycle immersion test. Rust-proof steel case is of rigid construction. Terminals may be of molded bakelite or glass and solder-sealed to case. Mounting bolts are welded gas tight. Unit is potted with rubber seal compound. This construction is claimed to eliminate mechanical cause of transformer failure due to shock from temperature, humidity changes and vibration. Made by **Thermador Electrical Mfg. Co.,** 5119 S. Riverside Dr., Los Angeles, Calif.

▲ Mention Item NED-2176 when writing ▲

TO END ALL CORROSION PROBLEMS

Saran is a tough thermoplastic originally made to replace such strategic war materials as aluminum, stainless steel, nickel, copper, brass, tin and rubber. Now found adaptable to a wide range of uses in product designing, food processing and wherever non-corrosive materials are necessary. Its insulating qualities, flexibility and ease of handling make it extremely valuable in installations dealing with oils, gases, air, water and corrosive chemicals. It is available in tube, pipe, sheet, rod and molded fittings.

Technical Bulletin P-8 will be sent on request. Address Dept. SK
Pat. No. 2160931

HODGMAN RUBBER CO.
FRAMINGHAM, MASS.
NEW YORK . . . 261 Fifth Avenue
CHICAGO . . . 412 South Wells St.
SAN FRANCISCO . . 121 Second St.

▲ Mention Item NED-2177 when writing ▲

Abolish Absenteeism

CAUSED BY ILLNESS DUE TO

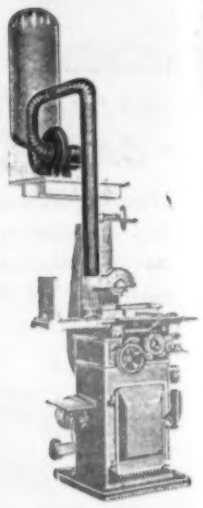
DUST BREATHING

in Grinding, Polishing, Sanding, Sawing and other Operations

USE LEIMAN BROS. NEW UNIT TYPE

DUST COLLECTOR

ONE FOR EACH MACHINE



•

A Powerful Suction of Air Keeps Dust Away — Safeguards the Health — Produces Quicker Results — Saves Your Machines.

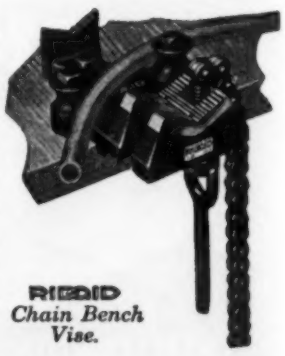
•

GET THE FREE INFORMATION

LEIMAN BROS.
167 CHRISTIE ST. • NEWARK, N. J.

▲ Mention Item NED-2178 when writing ▲

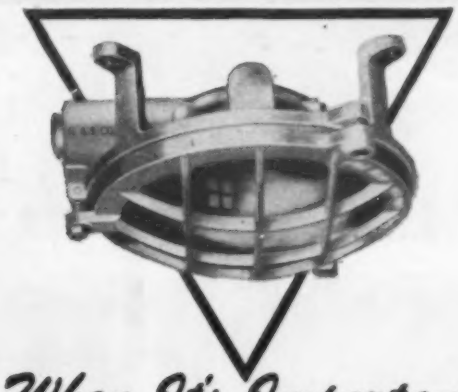
• Fold in the hinged legs, take it to your job, set it up quickly and you've got an efficient vise *and* a work-bench that stands solid against tipping over, with lots of room for oil can, dope pot and tools. Feet screw down and there's a ceiling brace, if you need them. Vise has tool steel LonGrip no-mar jaws and pipe rest — and handy pipe benders for three sizes of pipe. For more for your money, ask for the RIGID Tristand, yoke or chain vise models, at your regular Supply House.



RIGID *Chain Bench Vise.*

THE RIDGE TOOL COMPANY • ELYRIA, OHIO

▲ Mention Item NED-2179 when writing ▲



When It's Important

WHEN YOU PLAN OR REMODEL a building, an outdoor installation, a ship or an electrical machine, it is not always possible to pre-determine the hazards it will encounter during its long life of service. With R & S, the electrical system can be made vapor-tight, dust-tight, moistureproof, waterproof or explosion-proof — or all five if necessary. And R & S Ever-Lok wiring devices will prevent accidental interruption of service for the life of the job. IF IT'S IMPORTANT, R & S PROBABLY HAS IT. IF NOT, WE WILL MAKE IT.

Since 1902

RUSSELL & STOLL COMPANY
EXPLOSION-PROOF WATER-TIGHT AND EVER-LOK RECEPTACLES, PLUGS, CONNECTORS, SWITCHES AND FIXTURES
125 BARCLAY STREET • NEW YORK 7, N. Y.

18

▲ Mention Item NED-2180 when writing ▲

WELDRAWN
THE SUPERIOR WELDED (AND DRAWN) METAL TUBING FROM 5/8" OD DOWN

WELDRAWN is the trademarked Superior Tube Company welded tubing which combines practically all of the physical and metallurgical qualities of seamless . . . smooth bright finish, homogenous structure, close tolerances, high tensile strength — with economy. WELDRAWN has a firm preferred place in industry . . . the result of wide usage and highly satisfactory performance.

Produced in Stainless Steels (various analyses), and "Monel."

Write today for Bulletin No. 48.

SUPERIOR TUBE COMPANY
NORRISTOWN, PENNSYLVANIA
"FOR FINE SMALL TUBING"

▲ Mention Item NED-2181 when writing ▲

THESE WHEELS
FORETELL THE FUTURE

As these wheels read *today* . . . in combination with millions more of such wheels throughout America's war-production plants . . . so will read the headlines *tomorrow*, reporting the fortunes of war from blood-reddened waters and lands around the globe. For these are the figure-wheels of Veeder-Root Counting Devices, endlessly turning to keep the score on production . . . to give instant, visible alarms of any tendency toward power-lag or mechanical slowdown, before these tendencies develop into shortages of material that can cause waste of life, and prolong the war.

VEEDER-ROOT INC.
HARTFORD 2, CONNECTICUT, U.S.A.

▲ Mention Item NED-2182 when writing ▲

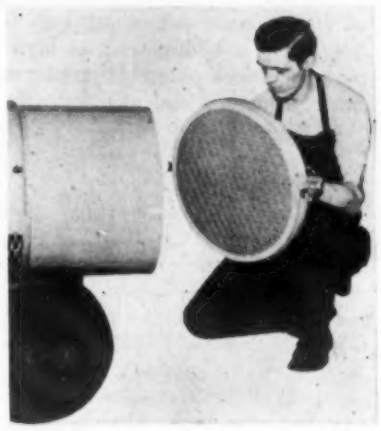
TEST CHAMBER

Of improved construction, model RTC-1 test chamber may be used for high and low temperature testing. Improvements include four individually operated plugs in lower panel of door which permit ready access to interior of testing chamber. Turn of handle opens plugs and hand may be inserted through insulated passage to adjust position or control on part being tested. Part need not be removed from chamber and other parts under test are unaffected.

Machine is fully automatic. Precision controls are used. Any required temperature ranging from minus 70 degrees to plus 158 degrees Cent. can be secured and maintained so that actual service conditions may be duplicated. Made by **American Coils, Inc.**, 27 Lexington St., Newark, N. J.

▲ Mention Item NED-2183 when writing ▲

GENERATOR DUST FILTER



Adaptable to direct current generator welders and similar machinery, this permanent, all-metal air filter is designed for quick, easy installation on all standard types of direct current generator units. Of impingement type, filter unit traps all dust particles before they can reach rotating parts of equipment. It is claimed to double brush life, prevent clogged rotors and reduce maintenance. Made by **Air Devices, Inc.**, Dept. D, 17 E. Forty-second St., New York 17, N. Y.

▲ Mention Item NED-2184 when writing ▲

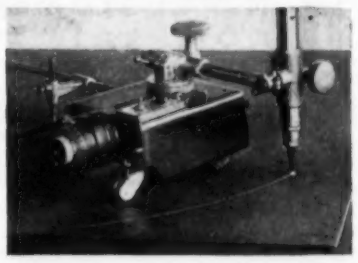
HIGH-BAY LIGHTING UNITS

Recent release by War Production Board of limited quantities of aluminum for industrial lighting fixtures has lead to resumption of manufacture of these Alzak aluminum high-bay lighting reflectors for industrial use. This line features 30, 60 and 90-degree beam spreads and all have 50-degree direct light cut-off. Reflectors are made of heavy-gage aluminum and reflecting spaces are treated to assure even lighting distribution. They are electrolytically brightened and permanently sealed by Alzak process. Sizes are available for 300 to 1500-watt incandescent lamps and for 400-watt mercury vapor lamps. Made by **The Edwin F. Guth Co.**, 2603 Washington Blvd., St. Louis 3, Mo.

▲ Mention Item NED-2185 when writing ▲

Speed Metal Cutting Jobs

with the
AIRCO
No. 10 RADIAGRAPH
GAS CUTTING
MACHINE



On many metal-cutting jobs you save production time, increase cutting accuracy, and conserve man-hours with the Airco No. 10 Radiagraph.

This portable, motor driven gas cutting machine cuts steel at 4" to 60" per min., depending on the thickness of metal. It runs on a track to make straight cuts with either square or beveled edge. One 5' track is supplied with each machine. By using two tracks dovetailed together progressively, straight cuts of any length can be made.

For cutting arcs and circles from 3" to 85" in diameter, a radius rod and center point are supplied. Larger circular cuts may be made with a longer radius rod.

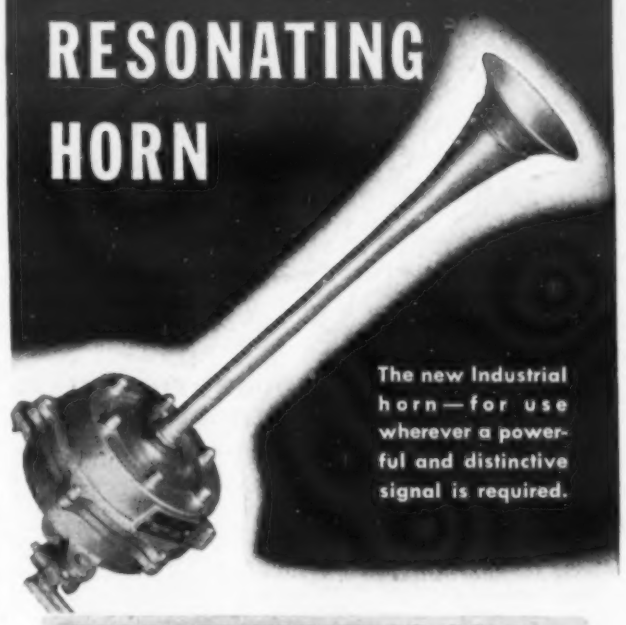
Write for Catalog ADC-614A. Address Dept. DEN, Air Reduction, 60 E. 42 St. N.Y. 17, N.Y.

★ BUY UNITED STATES WAR BONDS ★

AIR REDUCTION
General Offices: 60 EAST 42nd STREET, NEW YORK 17, N.Y.
OFFICES IN ALL PRINCIPAL CITIES
In Texas: MAGNOLIA AIRCO GAS PRODUCTS CO. • *Gen. Offices:* HOUSTON, TEXAS

▲ Mention Item NED-2186 when writing ▲

FEDERAL RESONATING HORN



The new Industrial horn—for use wherever a powerful and distinctive signal is required.

FEDERAL ELECTRIC CO., INC.
SIREN HEADQUARTERS
8711 So. State Street Chicago 19, Illinois

▲ Mention Item NED-2187 when writing ▲

HARVEY Delivered My Dural Automatic Screw Machine Parts on Time—Got Me Off the Spot!

I was in a tough spot—couldn't keep up our stock of Dural automatic screw machine parts. Inventory was too slim for safety.

Then I tried Harvey.

★ ★ ★

Harvey's got both the materials and the machines to produce Dural automatic screw machine parts, nuts and bolts—*in quantity* and at a low price. Harvey can produce Dural machine parts of any kind, and all sizes of nuts and bolts, from 3/8" up, rounded or hexes, blank or finished. We can positively meet any production schedule or price in the world, because we have modern high-speed equipment that turns out top quality parts in record time.

If you are a prime or subcontractor and want Dural automatic screw machine blanks or finished parts, we are just the people who can fill your order. Special prices for large quantity orders.

Phone, wire, or write your requirements.

"for three decades serving America."

HARVEY MACHINE CO., INC.
6200 Avalon Boulevard • Los Angeles 3, California
Plants at Los Angeles and Long Beach

DIVISIONS • MACHINERY • AUTOMOTIVE • ELECTRONICS • OIL TOOL SUPPLIES • HOUSEHOLD UTILITIES

▲ Mention Item NED-2188 when writing ▲

Filling the vacant chair

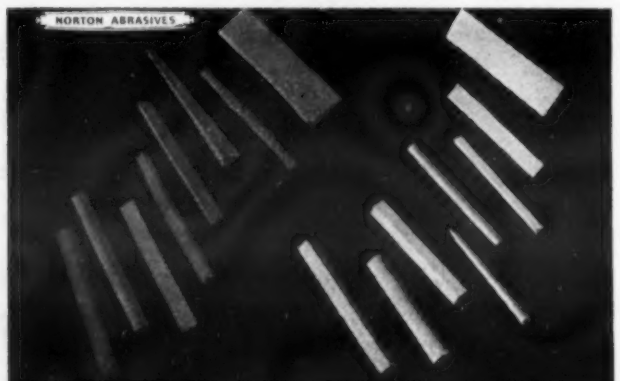
AMPLICALL BROUGHT BILL STEVENS TO THE MEETING IN SHORT ORDER!

Delays in locating key executives for important meetings frequently tie up the valuable time of other men, with a resultant over-all loss of precious man-hours. But locating key personnel in split-seconds is only one of the multiple uses of the *AMPLICALL* Paging and Two-Way Communications System. *AMPLICALL's* perfect *tonal quality* and *instant contact* features are making it possible for thousands of industrial concerns all over the nation to save hours of time and miles of steps daily. *Relieving switchboard congestions . . . cutting thru delays . . . getting things done faster . . .* is only part of the remarkable efficiency story of this streamlined electronic system. Let us give you the complete facts.

Electroneering is our business Rauland RADIO . . . SOUND . . . COMMUNICATIONS

The Rauland Corporation . . . Chicago, Illinois

▲ Mention Item NED-2191 when writing ▲



They Pay Big Dividends

"India" and "Hard Arkansas" Oilstones for hand stoning your expensive bits, drills and millers and for finishing the most intricate and expensive dies, produce the most astounding results in time and metal saving.

Their cost? Almost nil.

Their value—beyond belief!

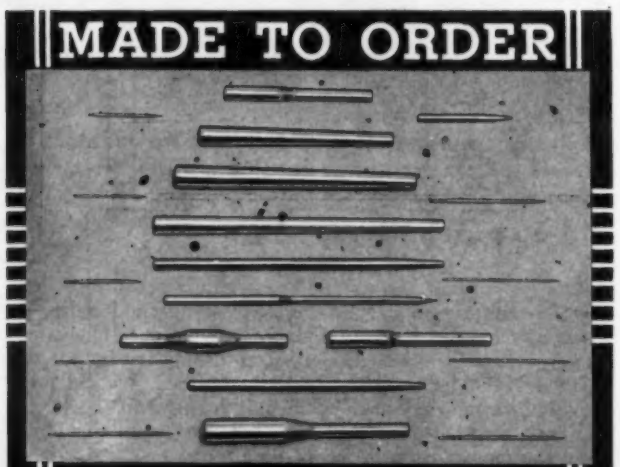
Send for our booklet "Hand Stoned Cutting Tools" and folder "Oilstone Files." They'll prove an eye-opener, we're sure.

BEHR-MANNING (DIVISION OF NORTON COMPANY) TROY, N. Y.

Offer valid only in U. S. A.

▲ Mention Item NED-2192 when writing ▲

MADE TO ORDER



Tubes, Rods, Wire reduced by rotary swaging to your specifications by the pioneer rotary swaging machine builder.

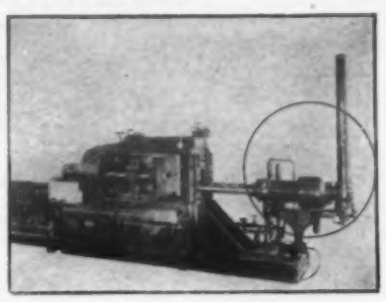
Cuts show various tubes reduced, tapered and closed on end by swaging. Solid work up to 5/8" diameter and medium wall tubing up to 2 1/2" O. D. can be handled.

You benefit from our nearly seventy years' rotary swaging experience.

The Torrington Company SPECIALTY DEP'T. Torrington, Conn., U.S.A.

▲ Mention Item NED-2193 when writing ▲

DIE CASTING SYSTEM



Eliminating necessity for hydraulic accumulators on die casting machines, prefill injection system is also claimed to improve quality of die castings produced. This system is available as optional equipment on Lester-Phoenix high pressure cold-chamber die casting machines for aluminum, brass and magnesium alloys.

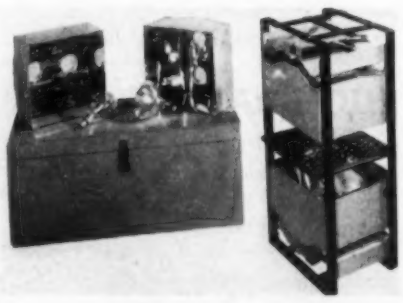
Injection pressure is stepped up to as high as 33,000 pounds per square inch in producing 3-pound aluminum castings and this pressure is held until metal chills in die. Molten metal is injected into die slowly so that air and gases can escape ahead of it. After die cavity is filled, high injection pressure is applied on metal, preventing formation of shrinkage voids and reducing entrapped air or gas to minimum in volume. Strong dense castings thus produced will pass X-ray examination.

Prefill system consists of hydraulic cylinder fitted with large actuating piston, hollow piston rod of which contains passageway for smaller inner fixed piston. Oil under pressure of 1000 pounds per square inch is introduced through hollow piston rod, displacing at high velocity small piston opposing it, which piston also carries with it in its forward movement piston rod and attached main or larger piston.

As latter moves forward at high speed, oil flows by gravity from vertical storage tank through prefill check valve to occupy space back of large piston. When die cavities have been filled, oil pressure of 2000 pounds per square inch from booster pump is applied directly to both pistons, resulting in high sustained final injection pressure which packs metal into die. When injection piston reverses, oil is returned to gravity tank and oil pump, ready for next cycle. Made by Lester-Phoenix Inc., 2711 Church Ave., Cleveland 13, O.

▲ Mention Item NED-2194 when writing ▲

INFRA-RED HEATING UNIT



Universally adjustable for tests and demonstrations, this Infra-Test-Kit is contained in sturdy carrying case which may be used as table when testing or experimenting. Wired for operation on 115 volts unless otherwise specified, it operates on alternating or direct current and supplies temperatures ranging from 70 to 400 degrees Fahr. Either clear or reflector infra-red lamps may be used. Heat units, each containing two lamps, are insulated with Fiberglas.

Hy-Heat units mounted above and below expanded metal or glass shelf or slide tray are widely adjustable as to distance from work on shelf. Over 3000 British thermal units are delivered from four 250-watt lamps.

Equipment may be used for expanding bearings for shrink fits, paint baking operations, sample drying and similar functions. List price is $78. Made by Infra-Red Engineers & Designers, 1633 E. Fortieth St., Cleveland, O.

▲ Mention Item NED-2195 when writing ▲

NO CUSTOMER COMPLAINTS . . . shipments move when

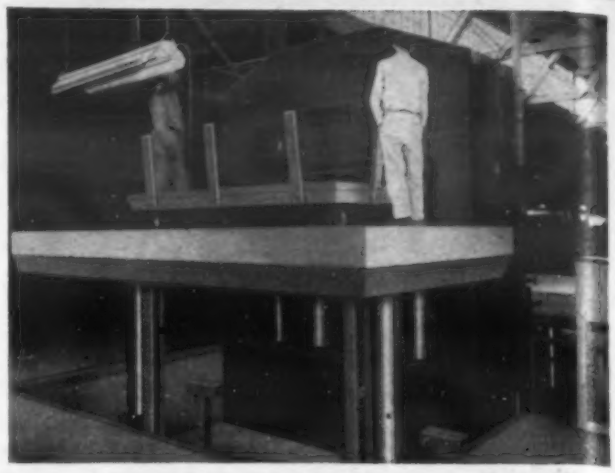
MARSH STENCIL MARKED

Millions in shipments are lost because of poor marking. *Stencil-Marked* addresses assure prompt delivery. Unlike tags and labels they can't come off . . . regardless of weather or handling. Cut your own stencils with a Marsh Machine. Save up to $600 annually in shipping department. Three sizes to meet Gov't Spec., 1", 3/4", 1/2". Write for FREE booklet, prices.

MARSH STENCIL MACHINE COMPANY, 23 Marsh Bldg., Belleville, Ill., U. S. A.

MARSH

▲ Mention Item NED-2196 when writing ▲



More Production Output per Machine!

The output of your presses, shears, etc, can be stepped up 20% to 40% by feeding material into them and receiving it on Rotary Levelators, as shown above. Even the highest stacks are easily leveled up to bed level . . . less worker fatigue . . . faster . . . reduces traffic. Car rises as oil is pumped into hydraulic jack by electric pumping unit. Control as desired.

Send for Free book. This new manual (Catalog RE-201) contains numerous photographs of Levelators solving all kinds of problems. It also contains a wealth of informative data . . . layout information, etc. Write Rotary Lift Company, 1031 Kansas St., Memphis, Tenn.

Rotary MEMPHIS LEVELATORS

▲ Mention Item NED-2197 when writing ▲

QUIT WORRYING ABOUT SPECIALTY TRANSFORMERS

If you need specialty transformers . . . we build all kinds

Example: one for use on aircraft machine tools—

—another for control circuits on flying fortresses

WE BUILD ALL TYPES—FROM STANDARD PARTS

we assemble them quick—

from standardized parts in our stocks

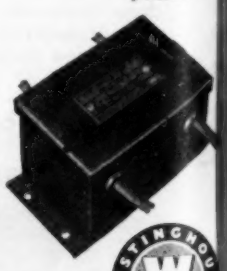
SAY THE WORD AND WE'LL BUILD YOURS TOO

let us build yours, too

you'll get faster delivery—by utilizing engineering skills and production abilities

J-21280

QUICK—WRITE OR WIRE FOR FULL DETAILS!



Westinghouse MT TRANSFORMERS

DEPT. 7-N., WESTINGHOUSE ELECTRIC & MFG. CO., EAST PITTSBURGH, PA.

▲ Mention Item NED-2198 when writing ▲

In War, as in Peace...

CERRO ALLOYS

SAVE TIME and CUT COSTS!

CERROMATRIX (Melting Temp. 250° F.) For securing punch and die parts, anchoring machine parts without expensive drive fits, short run forming dies and other metal-working applications.

CERROBEND (Melting Temp. 158° F.) Used as a filler in bending thin-walled tubing to small radii. Easily removed in boiling water. Also used for aircraft assembly jigs, templates for forming dies and other purposes.

CERROSAFE (Melting Temp. 190° F.) Used to accurately proof-cast cavities such as molds, gun chambers, forging dies, etc. and for many similar applications.

REPRESENTATIVES AND DISTRIBUTORS

BROOKLYN, N. Y., Belmont Smelting & Refining Works
ANSONIA, CONN., Jackson Associates.
BOSTON, MASS., Jackson Associates.
PHILADELPHIA, PA., Castaloy Metal Sales Company
CHICAGO, ILL., Sterling Products Co., Inc.
CLEVELAND, O., Die Supply Co.
DALLAS, TEX., Metal Goods Corporation.
DETROIT, MICH., Castaloy Metal Sales Company.
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LONDON, ENG., Mining & Chemical Products, Ltd.
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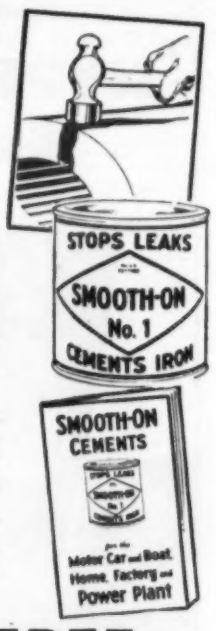
MOLINE, ILL., Sterling Products Co., Inc.
MONTREAL, CAN., Dominion Merchants Ltd.
NEW ORLEANS, LA., Metal Goods Corporation.
ST. LOUIS, MO., Metal Goods Corporation.

CERRO DE PASCO COPPER CORPORATION
40 WALL STREET - - - NEW YORK 5, N. Y.

▲ Mention Item NED-2199 when writing ▲

EMERGENCY REPAIRS LAST...when made with SMOOTH-ON



LEAKS and cracks, loosened parts—troubles that slow up production and may, if unchecked, run up repair expense—all are remedied promptly, lastingly and at low cost with Smooth-On No. 1 Iron Repair Cement. Applied like putty, no heat needed, no dismantling.

Engineers, mechanics, and maintenance men have been relying on Smooth-On for nearly half a century, using it for countless repair jobs, both routine and emergency. Obtainable in 7-oz., 1-lb., 5-lb., 25-lb. and 100-lb. sizes from your supply house, or direct from us when necessary.

Repair Hand-Book FREE

40 pages of time-saving, money-saving instructions, ideas, short-cuts. Exact procedure for numberless repair jobs, compiled from years of actual experience. 170 diagrams. Your name and address on a post card will bring your copy.

SMOOTH-ON MFG. CO., Dept. 10
570 Communipaw Ave., Jersey City 4, N. J.

Do it with SMOOTH-ON

▲ Mention Item NED-2200 when writing ▲

"Chambermaid" for 1200 Horses!

A Baker "Baby" Bulldozer daily removes the manure from literally acres of barns in which 1,200 horses are kept, at an Indiana pharmaceutical plant providing serums for Uncle Sam's fighters.

The barns must be kept spic and span clean—the husky, readily maneuvered Model 282 Baker on an International I-4 tractor does a thorough job, relieving the manpower shortage.

Investigate this handy unit for your plant for cleaning, material handling, salvaging, loose material piling and snow removal jobs.

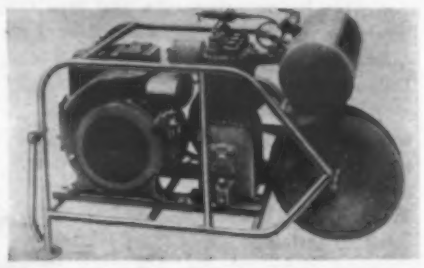
Send for Bulletin No. 835.

THE BAKER MFG. CO.
519 Stanford Ave.
Springfield, Ill.

BULLDOZERS SNOW PLOWS BAKER CONSTRUCTION EQUIPMENT

▲ Mention Item NED-2201 when writing ▲

AIR COMPRESSOR



Mounted on wheelbarrow type chassis, model 216 air compressor is readily portable for all types of interior uses. Driven by air-cooled gasoline engine at 1250 revolutions per minute, this single-stage air-cooled compressor delivers in excess of 16 cubic feet of air per minute at 80 pounds per square inch pressure.

Since this unit is designed primarily for use in locations inaccessible to stationary or truck-mounted units, it has mud and waterproof steel front wheel, and belt tensioning device to facilitate starting of engine in cold weather. Hand crank permits removing compressor load from engine during starting. Frame is of welded tubular construction. Handles are hinged to drop out of way when unit is stationary.

Weighing only 225 pounds complete, unit may be handled easily by one man. Originally designed for use by armed forces, this model will serve many post-war uses. Made by **Quincy Compressor Co.**, 307 Main St., Quincy, Ill.

▲ Mention Item NED-2202 when writing ▲

WIRE MARKING TAB

Identification of electrical conductors is assured positively through use of this tab or apron type wire identification marker. Sufficient area is provided for adequate identification markings. This is particularly important on fine or small diameter conductors, especially in sizes smaller than No. 10. Possessing resistance properties of standard varnished cotton tubing, markers are available with any required imprinting. Made by **William Brand & Co.**, 274 Fourth Ave., New York 10, N. Y.

▲ Mention Item NED-2203 when writing ▲

DIMPLING TOOLS

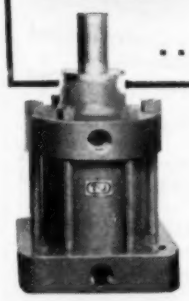
Intended for aircraft manufacturing operations on skin and rib dimpling, this two-piece dimpler consists of one-piece male punch and female die. Each tool is designed to eliminate cracks. Curved mating surfaces overcome spring-back tendencies of dimpled surfaces and provide flat support for skins. Metal is coined into dimples that nest above or below other sheets of any thickness. Tools may be used with standard squeeze type riveting equipment.

Small size facilitates positioning of portable squeezer on pre-subassembled wings and frames. In addition to standard dimplers, special sets can be furnished to specifications. Made by **Topflight Tool Co.**, P. O. Box 6728, Towson 4, Md.

▲ Mention Item NED-2204 when writing ▲

"Tailored" to the Job

...For 100 lb. Power Movement



. . . or 50,000 lb. Power Movement

● Big or little jobs for "mechanical muscle"...are handled with TOP speed and efficiency by T-J Cylinders!

T-J AIR CYLINDERS exert power movement from 100 lbs. to 12,000 lbs. (direct)... T-J HYDRAULIC CYLINDERS exert power movement from 1000 lbs. to 50,000 lbs. (direct). Available in sizes, styles and strokes for efficient power movement in any direction. Write for catalogs. . . . The Tomkins-Johnson Co., Jackson, Mich.

FOR TOUGH JOBS...SPECIFY T-J
TOMKINS-JOHNSON
AIR AND HYDRAULIC CYLINDERS

▲ Mention Item NED-2205 when writing ▲

KELITE

SCIENTIFIC CLEANING THROUGH pH CONTROL

KELITE KDL No. 32 REMOVES CAMOUFLAGE ...FAST!

Speed up aircraft camouflage removal with KELITE KDL No. 32. This new material has been developed especially to meet the present need for rapid paint stripping operations.

Sprayed on cold, it penetrates so that hosing quickly washes away paint completely. Safe for aluminum, brass, bronze and steel . . . KELITE KDL No. 32 goes farther and its limited evaporation protects workers' lungs.

Write Today for Data and Prices on KELITE KDL No. 32

KELITE PRODUCTS, INC.
909 EAST 60TH ST. • LOS ANGELES 1, CALIF.
Manufacturing plants in Los Angeles, Chicago, Perth Amboy, Houston. . . . Branches in principal cities.
Copyright 1944, Kelite Products, Inc.

▲ Mention Item NED-2206 when writing ▲

IRONBOUND MATERIALS-HANDLING EQUIPMENT

...meet severe industrial requirements!

Your production and shipping problems can be greatly simplified with IRONBOUND skid platforms, semi-live skids, floor trucks and pallets. Sturdy and ruggedly built, these products assure extremely long service life.

Bolted, bolted and welded, or welded construction are among the numerous safety features to minimize personal injury and property damage. Literature on request.

IRONBOUND BOX & LUMBER CO.
55 Hoffman Place, Hillside, N. J.

IRONBOUND
MATERIALS-HANDLING EQUIPMENT

▲ Mention Item NED-2207 when writing ▲

There is no Worthwhile Substitute For Correctly Built WHEELS

Whatever your materials handling jobs — or the wheeled equipment you produce — WHEELS are IMPORTANT. If you want free-rolling under heavy loads — if you want to protect expensive floors — if you want quiet operation — if you want full-cushioned shock absorption to protect fragiles — if you want your wheel bearings protected against abrasive grits — there is a French & Hecht type of wheel exactly suited to your needs.

SPOKE CAST and PRESSED WHEELS for INDUSTRY with or without RUBBER TIRES

For TODAY and for your POST WAR effort of producing more and better goods at less cost, the 55 years of wheel building KNOW HOW we offer you can be converted into a profitable asset.

French & Hecht engineers will gladly submit recommendations on your particular materials handling problem — or the proper wheeling of conveyances or portable equipment you are now producing — or are designing for future markets. Our facilities enable us to design and test the wheels you require — and then produce them in volume, on schedule, at attractive prices.

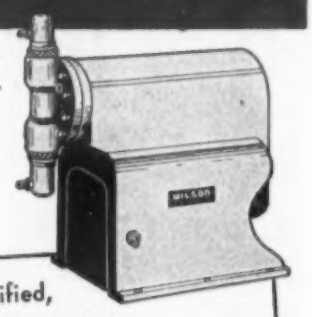
Complete Information on Request

FRENCH & HECHT, INC.
A SUBSIDIARY OF KELSEY-HAYES WHEEL CO.
DAVENPORT, IOWA, U. S. A.
WHEEL BUILDERS SINCE 1888

▲ Mention Item NED-2208 when writing ▲

FOR ACCURACY AND TROUBLE-FREE OPERATION

in CHEMICAL PROPORTIONING for PROCESSING INDUSTRIES and for Water and Sewage Treatment



. . . insist on the simplified, proved-by-practice

WILSON PULSAFEEDER

Packless, positive displacement piston pumps of superior design.

Engineered and Manufactured by

WILSON CHEMICAL FEEDERS, INC.

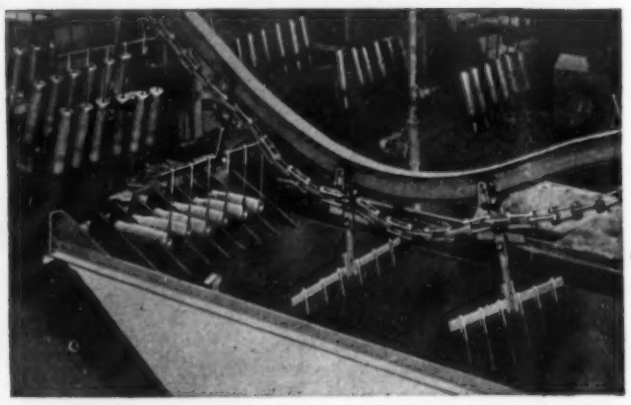
Literature on Request

202 CLINTON STREET • EST. 1923 • BUFFALO 4, N.Y.

▲ Mention Item NED-2209 when writing ▲

BAKELITE

TRADE-MARK



COATINGS FOR STEEL CARTRIDGE CASES

A wartime production feat that may solve many industrial coating problems

THE CONVERSION from brass to steel in the manufacture of cartridge casings was a design and production feat that has gone down in history. It was a large factor in America's weathering the "copper shortage" crisis. But there is a lesson to be learned from the coating that protected these steel cartridges . . . a coating based on BAKELITE Resins, that withstood the rigors of storage, shipping, and handling, up to the final fiery blast inside our gun breeches.

For these steel cartridges didn't corrode . . . inside from their powder charges . . . outside from the salt spray of ocean shipping. Climatic changes and rough handling left them unharmed, ready for use. And breech temperatures on firing often reached 600 deg. F., yet the explosive expansion and contraction left the baked-on BAKELITE Resin Coating mirror-smooth, unbroken; permitted easy shell ejection.

Your product or equipment may not have to withstand the shipping rigors and "abuse in use" that was the lot of these steel cartridge cases. But the same type of BAKELITE Resin Baking Coating will help you meet other problems, such as resistance to chemical corrosion, abrasion, and elevated temperatures—even sterilizing with live steam. Please write Department 16, furnishing complete details to guide our technicians in the study of your problem.

BAKELITE CORPORATION, 30 E. 42 St., New York 17

Unit of Union Carbide and Carbon Corporation

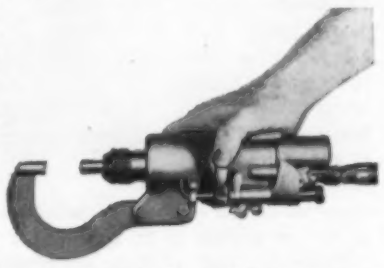
UCC

Coating Resins

▲ Mention Item NED-2210 when writing ▲

ONE-MAN RIVETER

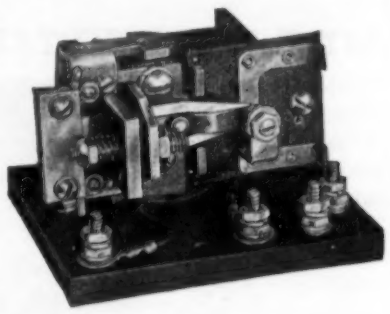
Usable by manufacturers and repairmen alike, this Air-Buck riveter requires only one operator because it does its own bucking up by means of yoke. Riveting is further simplified because tool drives rivet head to predetermined height which may be adjusted to any required dimension. When preset height of head is attained, tool shuts off automatically. Smaller and lighter in weight than squeeze riveters of equal capacity, this tool has two-stage throttle which enables operator to align or inspect rivet with initial, partial pressure before driving it home with full pressure. It will handle up to 7/16-inch diameter aluminum rivets. Made by **Ingersoll-Rand Co.**, 11 Broadway, New York 4, N. Y.



▲ Mention Item NED-2211 when writing ▲

SENSITIVE RELAY

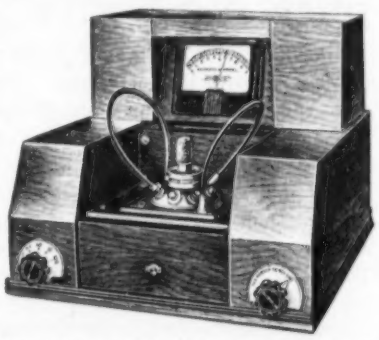
Featuring snap-acting contacts, type 79AXX relay is designed for variety of electronic circuit applications requiring highly sensitive unit. Contact pressure remains constant despite slow variations in coil current to which it is connected. When coil current reaches certain point, contacts operate with snap action. As little current as 10 milliwatts in coil circuit will operate relay. In addition to many highly sensitive vacuum tube uses, it may be applied for detecting overloads at low current levels. Made by **Struthers-Dunn, Inc.**, 1321 Arch St., Philadelphia, Pa.



▲ Mention Item NED-2212 when writing ▲

TUBE CAPACITY METER

Accurate measurement of vacuum tube interelectrode capacities can be performed on production basis with this model 37 meter. Unskilled as well as skilled personnel can operate instrument. Micro-microfarads are read directly from large meter when tube is plugged into wholly shielded measuring circuit of unit. Range is from 0.001 to 100.0 micro-microfarads with accuracy of 5 per cent.



Connector base accepts adapters for tubes up to eight-pin and provides for connection of co-axial cables to any pair of elements whose capacity is to be measured. Universal shield is supplied, or standard RMA shields may be supplied for specific tube types. Made by **Technical Apparatus Co.**, 1171 Tremont St., Boston 20, Mass.

▲ Mention Item NED-2213 when writing ▲

We wish you would try *all* air vises

THE AIRLOX SENIOR. 8½ x 22⅝ inches. Gripping force fifty times air line pressure.

Take several air vises having the rated capacity needed for one of your own machine tool operations. . . . and check the lock-up pressures *in production* for each vise.

We think that for fast operation and gripping force you will prefer an Airlox vise.

They are designed like all good machine tools . . . with the weight, substantial construction and balance needed to stand up under hard usage.

Airlox vises may be synchronized with machine operation or manually operated. There are 6 Airlox models . . . providing gripping force 4 to 50 times air line pressure. Write for specification sheets.

production devices incorporated
P. O. Box 209 Whitehall, New York

AIRLOX production vises 2108

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Thermoswitch

HEAD AND SHOULDERS ABOVE!

For adaptability, high manufacturing savings, ease of installation, the Fenwal Thermoswitch is head and shoulders above the field of thermal controls.

●

With ±1/10° sensitivity and a range from minus 100° to plus 600° F. the Thermoswitch is today's most efficient heat (and cold) control. Rated 10a. 115v.

Write for new catalog

THE FLANGE HEAD THERMOSWITCH

Fenwal INCORPORATED

70 PLEASANT ST., ASHLAND, MASSACHUSETTS

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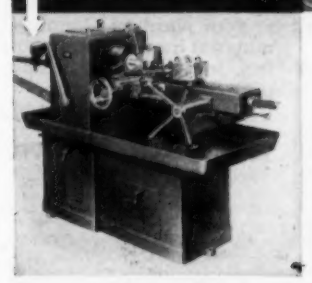
"HYPER-MILLING" Explained!

ASK FOR BULLETIN FE-106

Firth-Sterling STEEL COMPANY
McKeesport, Pa.

▲ Mention Item NED-2216 when writing ▲

YOU CAN MAKE HEAVY FORMING CUTS ON THE OSTER "RAPIDUCTION" TURRET LATHE



● Cutting all three grooves simultaneously in the sheave illustrated above is an easy job for the Oster No. 601 "RAPIDUCTION" equipped with WORM DRIVE. For high speed work on small diameters and non-ferrous metals, the machine is furnished with a DIRECT DRIVE to obtain spindle speeds up to 3000 rpm. This SIMPLIFIED, POWER-DRIVEN screw machine is designed to perform a wide variety of bar and chucking jobs. Equipped with either the *automatically indexed*, 6-station turret or with plain saddle and single tool post, as desired. Either WORM DRIVE (for making exceptionally heavy forming cuts) or DIRECT DRIVE (for high speed work) can be furnished. Capacity with automatic chuck is 1½" round bar. Swing over bed is 14"; over cross slide—6½".

New operators learn rapidly on this machine as there are no complicated features. Hundreds of plants now use Oster No. 601 "RAPIDUCTIONS." Write for illustrated catalog "LIST No. 27-B."

THE OSTER MANUFACTURING COMPANY
2066 East 61st Street • Cleveland 3, Ohio, U.S.A.

OSTER Cuts Your Costs!

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THIS BOOK Will Help You

. . . Slash costs and time on many Surfacing Operations

Porter-Cable's

Precision Abrasive-Belt Surfacers

are taking over many tasks formerly assigned to millers, grinders, shapers, lathes—and turning out the work faster—5 to 25 times faster—WITH SUPERIOR FINISH.

Wet-Belt Surfacing works an entire area, as large as 9" x 17", with one presentation to the belt. Final finish is produced while taking the cut. Wet-Belt Surfacing is a precision method—tolerances of .0005" can be met by even inexperienced operators. It eliminates heat, discoloring, dust, distortion, flow, chipping. It works on any material; handles most jobs free-hand. Jigs, whenever they're required, are the simplest design. Set up time greatly reduced.

LEARN MORE ABOUT IT! Send today for our new booklet, which is virtually a treatise on one of the biggest machining aids to come out in years.

PORTER-CABLE Machine Co.
1710-4 N. Salina St., Syracuse, N. Y.

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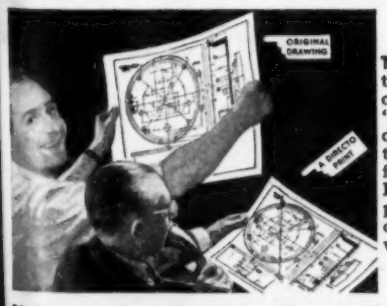
DIETZGEN DIRECTO

. . . into their hands quickly
. . . into their minds correctly

In less than a minute you can make a Directo Black on White Print . . . which is an exact duplicate of the subject it reproduces. Before the minute is up you can have that Directo Print on its way to a workman in the machine shop . . . or to an important conference . . . or to some important man in another town. And because it is *black on white,* just like the page you now are reading, you can be sure he will understand it, with less confusion, less delay, least chance of error creeping in.

TWO SIMPLE STEPS produce Directo Prints. 1st, original drawing and sheet of Directo Paper are exposed to light. 2nd, the exposed Directo Print is developed semi-dry. Print is immediately ready for use. No darkroom, plumbing, trays or drying equipment.



THEY'RE TWINS. A Directo Print is an exact duplicate in every way, an "identical twin" of the drawing, map, graph, letter or specification sheet from which it is made. Each print costs but a few pennies, any youngster can master the process with minimum instruction.

If you could see the tons of Directo Paper *now* flowing daily to all parts of the country, you would know it's the boost Directo gives to crucial production and to plans *in the making* that interests responsible men. Why this is so, why you too may find Directo Prints playing a major role in *your* plans, is told in the new Directo book just off the press. It is free and you can get your copy by writing or calling your Dietzgen dealer or any office listed below.

EUGENE DIETZGEN CO.
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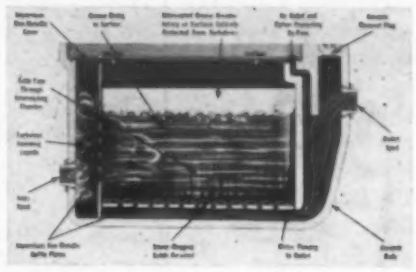
DIRECTO,
DIRECT POSITIVE COPIES

▲ Mention Item NED-2219 when writing ▲

GREASE TRAP



Greases and fats are claimed to be prevented from causing trouble in drainage lines through use of this Greaseptor grease interceptor. Unit intercepts, separates and recovers greases and fats near entrance to drainage lines. It is adaptable wherever grease laden wastes are residue of manufacturing or processing operations, as well as in lines leading from industrial cafeterias or restaurants. Grease is recovered by flotation process. Perforated baffle plates eliminate turbulence and assure efficiency of separation. Units are available either in cast iron or in durable thermal shock resistant ceramic material, and in sizes with capacities up to 25 gallons per minute with fat retention of up to 55 pounds. Made by **J. A. Zurn Mfg. Co.,** Erie, Pa.

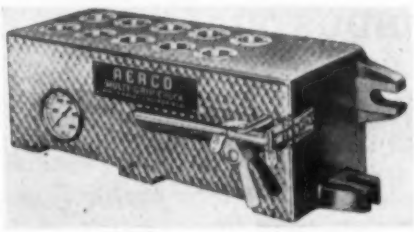
▲ Mention Item NED-2220 when writing ▲

RUBBER GRINDING WHEEL

Developed for finishing molded synthetic rubber products, this B-C grinding wheel is claimed to cut fast, clean and cool without pulling or crowding of softest rubber compounds. It remains cool on all types of rubber, thus removing fire hazard in both grinding and finishing operations. It is made in wide variety of shapes and sizes to fit practically any finishing requirements. Made by **Atlantic Abrasive Corp.,** 504 Pearl St., South Braintree, Mass.

▲ Mention Item NED-2221 when writing ▲

MILLING MACHINE CHUCK



Production of milling operations can be increased by as much as 500 per cent through use of this hydraulic multi-grip milling machine chuck. It has two rows of five collets each. As both rows of parts may be milled simultaneously, ten parts are machined with single loading. A few strokes of hydraulic hand pump supplies necessary pressure for closing all collets simultaneously, building up pressure to as much as 2500 pounds per square inch. Work is thus held rigidly and cannot turn or be pulled out during milling operations. Clamping pressure is instantly released when desired and self-opening collets can be reloaded quickly.

Self-centering aligning collets insure on-center milling regardless of slight shank diameter variations. Automatic safety stop prevents damage to collets should all stations not be filled. Adjustable depth stop in each collet makes it possible for operator to insert pieces quickly for milling without use of gages. Model 10-B has collet capacity from ⅛ to ½ inch. Model 10-E has collet capacity from ½ to 1¼ inches. Round, square and hexagon collets are available in both models. Made by **Aerco Corp.,** Hollydale, Calif.

▲ Mention Item NED-2222 when writing ▲

CRESCENT
SYNTHOL
WIRES AND CABLES

for long service under difficult conditions

SYNTHOL Type SN
SMALL DIAMETER BUILDING WIRE

is inherently moisture-resistant, flame retarding, oil, chemical and sun proof. It has the smallest outside diameter for a given copper size, permitting more conductors in a given size conduit, is easy to fish, clean-stripping, SAFE and PERMANENT.

SYNTHOL *Machine Tool and Control*
WIRES AND CABLES

The desirable characteristics of SYNTHOL insulation mentioned above are available in a wide range of sizes and number of conductors in permanent brilliant colors which are completely oil proof.

CRESCENT INSULATED WIRE & CABLE CO.
TRENTON, N. J.

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AN All-Electric ADJUSTABLE-SPEED DRIVE
FOR A-C. CIRCUITS
SPEED RANGES UP TO 16 TO 1
SIZES—1 TO 30 hp.

RELIANCE VS DRIVE

1 DIRECT DRIVE. Lower cost, because fewer parts (no intermediate speed-changing device). Power is closer to where it is needed. Use less space. Streamline your machine design.

2 SPEED CONTROL CONVENIENCE WITHOUT LIMITATIONS. Place speed-changer and start-stop button at any convenient point to which a wire can be run. Control always within easy reach.

3 OPERATES ON A-C. POWER.

4 QUICK STOPPING.

5 SMOOTH, FAST ACCELERATION.

6 REVERSING.

7 SPEED-SETTING.

8 SLOW FOR THREADING and INCHING.

Get Reliance Bulletin 311 for details—and other advantages.

RELIANCE ELECTRIC & ENGINEERING CO.
1088 IVANHOE ROAD • CLEVELAND, OHIO
Sales Offices in Principal Cities

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For 1½" 8 thread spindle lathes with ⅞" collet capacity.

Automotive thrust bearings incorporated in the design give large collet closing variation, necessary for second operation work. Collets can be changed while lathe is in operation.

All Allison Collets—round—hexagon—square and serrated are ready for immediate delivery. Special sizes and shapes on short notice. Order direct from your distributor.

Allison TOOL AND ENGINEERING CO.
4031 Whittier Boulevard, Los Angeles 23, California

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STRUTHERS-DUNN
INCORPORATED

5,288 TYPES OF RELAYS

Each available in countless coil combinations

1321 ARCH STREET, PHILADELPHIA 7, PA.

DISTRICT ENGINEERING OFFICES: ATLANTA • BALTIMORE • BOSTON • BUFFALO • CHICAGO • CINCINNATI • CLEVELAND • DALLAS • DENVER • DETROIT • HARTFORD • INDIANAPOLIS • LOS ANGELES • MINNEAPOLIS • MONTREAL • NEW YORK • PITTSBURGH • ST. LOUIS • SAN FRANCISCO • SEATTLE • SYRACUSE • TORONTO • WASHINGTON

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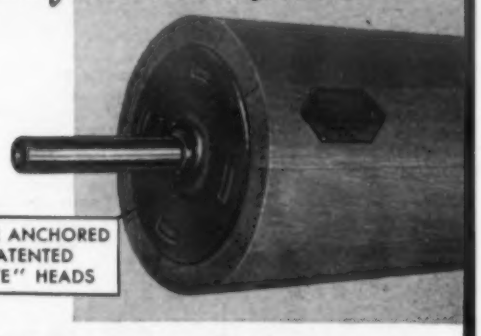
THE BEST WOOD ROLL FOR DRY SERVICE EVER MADE . . .

"Shaf-tite" Roll No. 252



SHAFTS ARE ANCHORED WITH PATENTED "SHAF-TITE" HEADS

That's what customers say who have been using these "Shaf-tite" No. 252 LAMINATED Wood Rolls for years. Made of kiln-dried pieces, glued under heavy pressure. Shafts are "anchored" with patented "Shaf-tite" heads. Standard sizes — 4 to 10 inch diameter. Write for quotation.

RODNEY HUNT

"Shaf-tite" ROLLS

RODNEY HUNT MACHINE CO., 73 Maple St., Orange, Mass., U.S.A.

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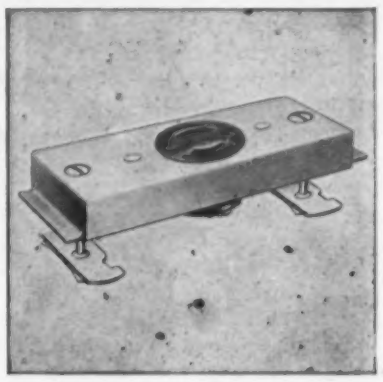
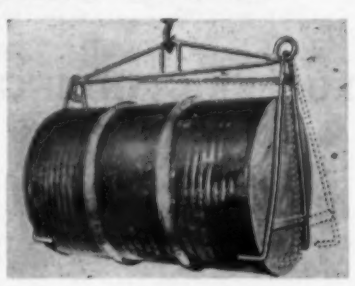
ELECTRIC RECEPTACLE



Providing plug-in convenience in wiring systems, especially on industrial applications along work benches, inspection racks and assembly lines, this No. 2127H Midget Twist-Lock two terminal receptacle is rated at 10 amperes on 250 volts. It may be used for plugging in hand tools, test apparatus, electrical appliances or work lights. Safety features have been incorporated in design. Made by **The Wiremold Co.**, Wiremold Place, Hartford 10, Conn.

▲ Mention Item NED-2231 when writing ▲

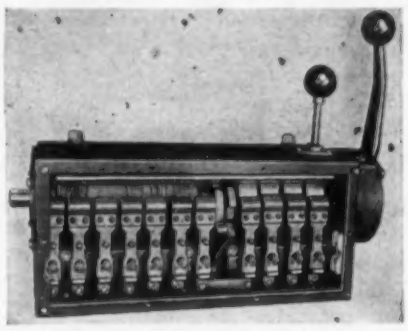
BARREL HANDLING CRADLE



Especially designed for picking up barrels and plywood or fiber drums having flush ends, this barrel cradle may also be used on any other type of barrel or drum. Built of heavy bar stock and of welded construction, it is durable. One end of cradle is rigid and other end is pivoted. Strong spring simplifies engagement of fingers on barrel or drum. Made by **Palmer-Shile Co.**, 7116 W. Jefferson Ave., Detroit 17, Mich.

▲ Mention Item NED-2232 when writing ▲

INDUSTRIAL TRUCK CONTROL



Improved economy in current consumption is claimed for electric and gas-electric industrial power trucks of this company which are equipped with new M-79 simplified four-speed reversing controller. Resistance is applied in first speed only, eliminating current loss encountered in other types of controllers having resistance in first, second and third speed positions when trucks are operated for protracted periods in second and third speeds. Additional power saving is attributed to manipulation of motor fields, connecting them in series on first and second speeds, thus providing greater torque with less current consumption.

Welded housing of controller is dust-tight and meets all specifications for flash-proofing. This unit is standard equipment on all Elwell-Parker electric or gas-electric low and high lift trucks in capacities up to 10,000 pounds. Made by **The Elwell-Parker Electric Co.**, 4502 St. Clair Ave., Cleveland 14, O.

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IMMEDIATE SHIPMENT

STEEL BOXES

For Your Production Needs

STYLE 600
STACKING BOX
An ideal all-purpose shop box. Sturdy all-welded construction. Heavy skids act as positive stacking lock and re-inforce box at point of maximum wear.
No. 601 — 10" x 16" x 6" — 18 ga. — $ .95 Ea.

STYLE 500
STACKING BOX
Perfect for the handling of small parts. Open front makes contents easily accessible when boxes are stacked. Will stack with Style 600 boxes.
No. 501 — 10" x 16" x 6" — 18 ga. — $1.15 Ea.

Prices F.O.B. Factory, Phila.—Any Quantity!
Order Today—Write, Wire or Phone

AMERICAN METAL WORKS, Inc.
1503 GERMANTOWN AVENUE, PHILADELPHIA 22, PA.

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Where Else Can You Find All of These Pump Advantages?

Here is a list of features designed and built into every Fairbanks-Morse Pump that leaves the factory. They are important features—your assurance of the best that can be built in modern pump manufacture.

Fairbanks-Morse Pumps give you—

- Sound and Practical Design
- Rugged and Simple Construction
- Inexpensive Installation
- Economical Operation
- Low Maintenance Cost
- Reliable and Efficient Performance
- Longer Life
- Adaptability to All Conditions
- Steady Flow at Uniform Pressure
- Reliable Engineering Service
- Standardized Parts Replacement
- Quality Control
- Protective Guarantee
- Purchase of Complete Unit from One Responsible Manufacturer

If you have pumping problems now, or if you are planning ahead . . . our engineers can help you as they are helping so many others. There is no obligation. Write Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

BUY WAR BONDS

FAIRBANKS-MORSE

DIESEL ENGINES · PUMPS · MOTORS · GENERATORS · WATER SYSTEMS · SCALES · STOKERS · FARM EQUIPMENT · RAILROAD EQUIPMENT

Pumps

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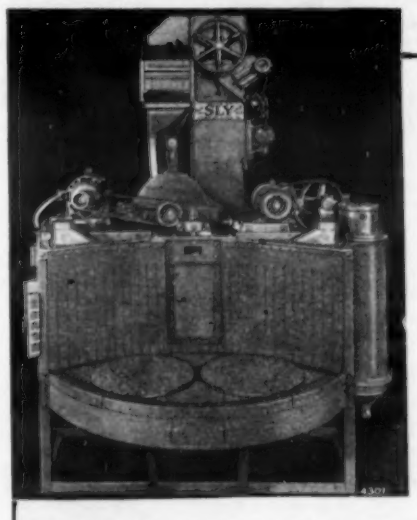

S L Y

BLAST-CLEANING EQUIPMENT

THE above illustration shows one of many different types and sizes of Sly Blast-Cleaning (Sandblast) Equipment.

What is your problem?

Our experience with thousands of installations is yours for the asking.

SLY THE W. W. SLY MFG. CO.
4748 TRAIN AVE., CLEVELAND 2, OHIO
INDUSTRIAL DUST CONTROL

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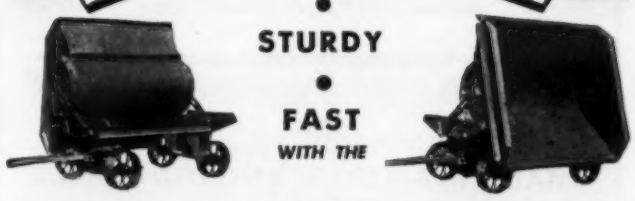
EFFORTLESS SWING!

PERFECT BALANCE • STURDY • FAST WITH THE



PHILLIPS DUMP TRAILER

Tip it to the right, tip it to the left,—the Phillips Dump Trailer *swings* in perfect balance, smoothly and fast!

Load slides out quickly and cleanly because of angle of body cradle. After dumping, body rights itself and locks in normal position. Built to give long, active service. One and one-half cubic yard capacity. Get the Phillips facts!

MANUFACTURERS SINCE 1863 PHILLIPS MINE AND MILL SUPPLY COMPANY PITTSBURGH, PENNA.

MINE & INDUSTRIAL CARS—FABRICATED STEEL IRON CASTINGS

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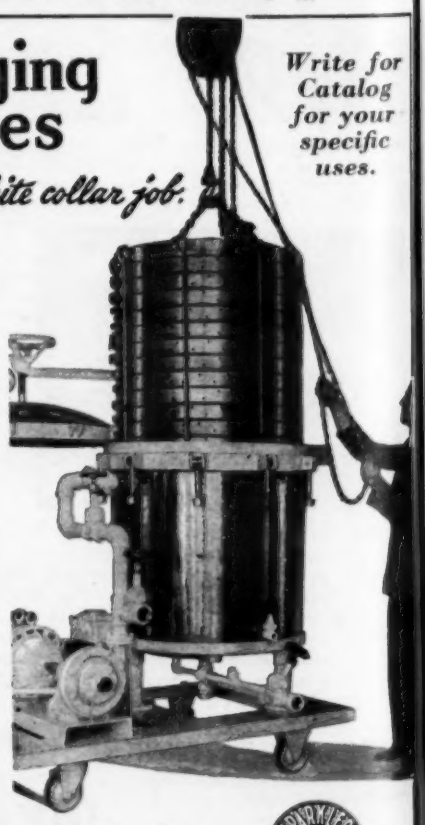
Changing plates

Almost a white collar job.

Write for Catalog for your specific uses.



Sparkler plates are interchangeable, which means the separate plates of one nest may be cleaned and prepared while another nest is being used in production. Eliminates the mess of cleaning half a dozen machines that are too small.

Sparkler Filters clarify or purify any fluid in any quantity, using any filter aid that produces the finest results at greatest speed.

SPARKLER MFG. CO.
344 Lake Street
MUNDELEIN ILLINOIS

SPARKLER HORIZONTAL PLATE FILTERS

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P&H WELDING POSITIONERS

NEW!
LOW PRICED!
CUTS WELDING COSTS!

- 2500 pound capacity at surprisingly low cost.
- All-welded rolled steel construction.
- Most versatile positioner in its class. Simple and easy to operate.
- Large table area with handy slots.
- Hydraulic power tilting.
- No exposed gearing.
- Manual turning to suit welding speed. Positive table locking device.
- Telescopic elevation.
- Portable or column-in-floor mounting.
- Also available with handwheel or power turning.

Write today for Bulletin P-2

General Offices: 4555 West National Avenue, Milwaukee 14, Wis.

HARNISCHFEGER CORPORATION
ARC WELDERS • EXCAVATORS • ELECTRIC CRANES P&H MOTORS • HOISTS • WELDING ELECTRODES

Canadian Distribution: The Canadian Fairbanks-Morse Co., Ltd.

▲ Mention Item NED-2238 when writing ▲

men and women stay on the job when they guard their hands with . . .

PLY Liquid PROTECTION!

Mild occupational skin irritations often develop into disabling dermatoses . . . keeping workers from their jobs, slowing up production. Proven PLY protection, in convenient, liquid form, is applied like any hand lotion. It dries quickly and completely, forms a barrier against oils, solvents, grime, chemicals of all kinds. There is a specific PLY formula for each group of skin hazards. Like thousands of the nation's leading industries, you too can maintain a full house if you specify PLY.

Only most popular PLY formulas come in liquid form. Dispensers packed with initial orders. No charge.

Write for FREE Booklet: The Answer to Industrial Dermatitis.

THE MILBURN COMPANY
3246 E. WOODBRIDGE • DETROIT 7, MICHIGAN

PIONEERS OF SKIN PROTECTION IN INDUSTRY

▲ Mention Item NED-2239 when writing ▲

NEW Insoluble HEAVY DUTY
PIPE JOINT SEAL

PLASTIC LEAD SEAL

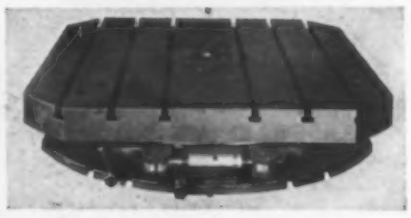
Now, one seal for every service: pipe line, refinery, marine, power, chemical, general industrial uses . . . Temperatures to 600° F. Pressures to 4000 pounds per sq. in. . . . Water, oil, steam, gases, petroleum distillates, propane, butane, hydrocarbons, etc. . . . *All equipment:* threaded joints, flanges and gaskets, nuts, caps, valves, plugs, screwed fittings, pumps, cylinders, etc. . . . *AIRCRAFT:* heater joints and fittings; hydraulic, gasoline and oil connections; shock absorbers; control elevators, etc.

Send for prices, sample, literature.

CRANE PACKING COMPANY, 1800 CUYLER AVENUE, CHICAGO
CRANE PACKING COMPANY, LTD., HAMILTON, ONTARIO, CANADA

▲ Mention Item NED-2240 when writing ▲

ROTARY MACHINE TABLE



Used in conjunction with horizontal boring, drilling and milling machine of this company, illustrated rotary tables provide positive positioning at any required angle through half-degree graduations. Fixed bushings at 90, 60, 45 and 30-degree points are standard. Meehanite cast table pivots on roller bearings. Base has hardened keys to assure alignment on machine table. Use of rotary table permits number of machining operations to be performed on work with minimum of set-up time. Made by **Portage Machine Co.**, Akron, O.

▲ Mention Item NED-2241 when writing ▲

PORTABLE LIFTING TABLE

Simplifying and speeding up handling of dies to and from machines, storage shelves and elsewhere, style F-1 and F-2 flat top portable lifting tables are operated by simple crank mechanism. They are adjustable to heights ranging from 24 to 40 inches. Smooth surface of table top facilitates sliding of dies. Units may be used also for supporting and leveling long bars, sheets and frames for fabrication or machining operations.

Of electric-welded steel construction, two sizes are 28 x 40 inches with capacity of 3000 pounds and 24 x 32 inches with capacity of 2000 pounds. Both models are equipped with heavy duty ball bearing casters and may be supplied with wheel brakes. Made by **Barrett-Cravens Co.**, 3253 W. Thirtieth St., Chicago, Ill.

▲ Mention Item NED-2242 when writing ▲

HYDRAULIC GAP PRESS

Fast, efficient handling of assembling, broaching, riveting, straightening, marking, forming and many other operations is possible with this Hy-Speed gap type hydraulic press. Available in 10 and 20-ton sizes with 50 per cent overload capacities, these units feature steel construction and simplified hydraulic foot-power unit and control. Only two levers are used in foot control. One applies even pressures of any degree, as rapidly or slowly as desired. Other releases pressure. Unit is self air-eliminating without bleeding.

Large hollow ram receives punches, dies and other fixtures. Other features are ground ram, packless sealing rings, aircraft style piston ring plungers, twin pressure gage showing pressure in system and tons of force at ram. Press is fully portable. Made by **Reimuller Brothers Co.**, 9400 Belmont Ave., Franklin Park, Ill.

▲ Mention Item NED-2243 when writing ▲

BUSCHMAN PORTABLE Conveyors

Load and unload by GRAVITY
Boxes
Crates
Cartons
Packages
to and from
Production lines
Storerooms
Trucks
Box-cars
Loading Platforms

DON'T carry packages. Do away with time-wasting handling and rehandling. Transport packages by *gravity* with Buschman Portable Conveyors.

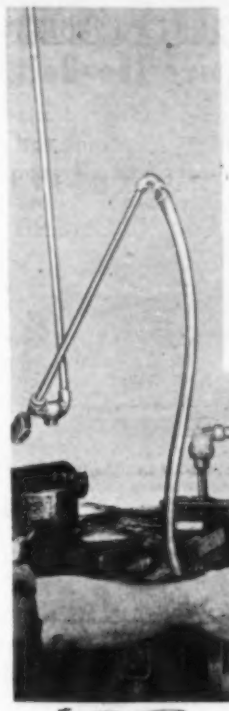
In Stock for Immediate Delivery

Write for Bulletin 8 showing many applications

In 10-ft. straight and curved sections. Mounted on easels or tripods. Set them up where you need them. Quickly, easily changed from one location or application to another. No tools required for coupling sections or adjusting height. Ideal for narrow aisles, doorways, crowded quarters. Low in cost!

THE E. W. BUSCHMAN COMPANY, Inc.
418 New Street • Cincinnati 2, Ohio

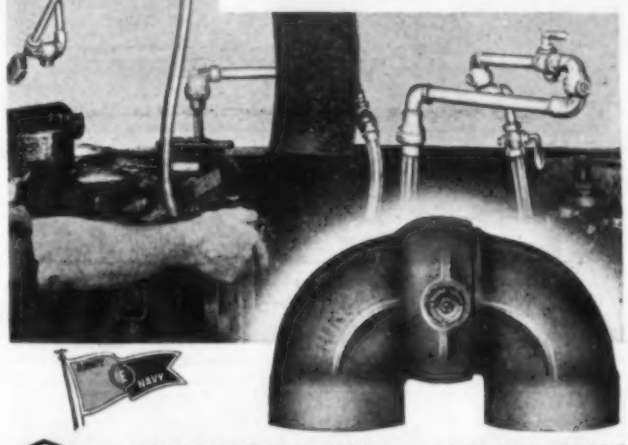
▲ Mention Item NED-2244 when writing ▲



CHIKSAN solves another problem

Replace leaking air and coolant lines—use Chiksan Ball-Bearing Swivels for Controlled Flexibility. Write for latest Chiksan Catalog and Engineering Data.

CHIKSAN REPRESENTATIVES IN PRINCIPAL CITIES



CHIKSAN TOOL COMPANY
Ball Bearing SWIVEL JOINTS for ALL PURPOSES
BREA, CALIFORNIA

▲ Mention Item NED-2245 when writing ▲

FORGED FLAT SPRINGS
• • • MADE IN ANY DESIGN FOR HEAVY DUTY APPLICATION

Heavy, hot formed springs require highly specialized equipment and processing operations. Consequently, one entire plant at Muehlhausen is devoted exclusively to the manufacture of hot formed springs. Wire or write your needs today on any size—coiled or flat—to meet any working condition. MUEHLHAUSEN SPRING CORPORATION, 550 Michigan Ave., Logansport, Ind.

MUEHLHAUSEN SPRINGS
EVERY TYPE AND SIZE

▲ Mention Item NED-2246 when writing ▲

COOK "Spring-life" BELLOWS

This tiny bellows responds to .009 lbs. pressure . . . . . yet withstands 1000 lbs. pressure p.s.i.

ONLY 3/4 INCH DIAMETER—BUILT ON THE "SPRING-LIFE" PRINCIPLE

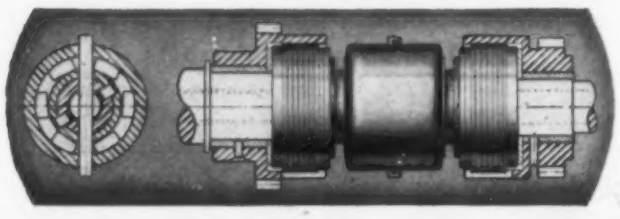
It has the ability to accurately register oil pressure from 0 to 400 lbs. p.s.i. and to return to within .0001 inch at any given pressure after maximum pressure has been applied. This small bellows is particularly adaptable where calibrations must be held to extremely close tolerances. "Spring-life" construction places no limit on type of metal, diameter or length of any single unit.

COOK ELECTRIC Company
2700 SOUTHPORT AVENUE
CHICAGO 14, ILLINOIS

▲ Mention Item NED-2247 when writing ▲

How PULLMORE CLUTCHES Can Be Shifted from Outside the Unit

This application provides for internal shifting of the PULLMORE Multiple Disc CLUTCH by a shifting rod which operates through the hollow clutch shaft. If your new or improved products present a drive problem, our engineers will be glad to show you how PULLMORE advantages can provide the solution.



Send for These Power Transmission Bulletins

They give capacities, dimensions and specifications. Contain application diagrams. Show how PULLMORE exclusive features are being used by product designers to help give post-war products competitive advantages.

Rockford Drilling Machine Division Borg-Warner Corporation
312 Catharine Street, Rockford, Illinois, U. S. A.
Pullmore Clutches are sold by Morse Chain Co. offices in principal cities.

▲ Mention Item NED-2248 when writing ▲

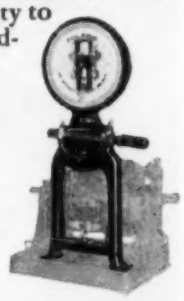
DYNAMOMETER SCALES *for your needs Today!*

Heavy duty Toledo Dynamometer Scale (Model 9711) used in airplane engine tests.

Toledo Remote Dial, electrically connected with the Dynamometer Scale.

● For today's heavy demands in engine testing...Toledo Dynamometer Scales are proving unbeatable for *accuracy, dependability* and *speed!* These scales are available in a full range of models. Such added features as Remote Dials for panel installation, and remote control of Unit Weights add further to their complete adaptability to a wide variety of modern requirements.

All Toledo Dynamometer Scales offer the proven advantages of the famous Toledo Double Pendulum Dial. Also, linkage is automatically reversible; dials swivel for maximum reading ease...and of particular importance are the vibration absorbing features that permit accurate indication even when equipment is operated at top speed.



Model 9704 Toledo Dynamometer Scale.

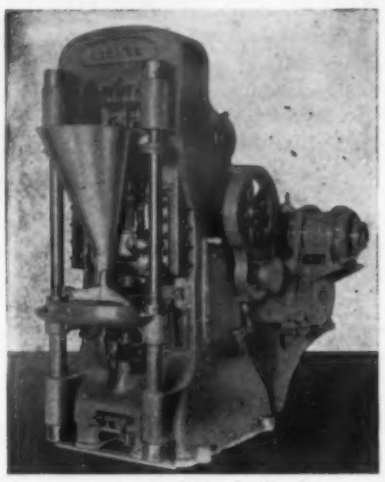
TOLEDO SCALES

★ *New...* **REFERENCE BOOK OF DYNAMOMETER SCALES**

This new 52 page book provides a wealth of helpful information on dynamometers of many types; illustrates recent installations, and describes in detail the wide range of modern dynamometer scale equipment. We will be glad to send this book without cost or obligation, to anyone having to do with dynamometer scale selection or use. Toledo Scale Company, Toledo, Ohio.

▲ Mention Item NED-2249 when writing ▲

BRIQUETTING PRESS

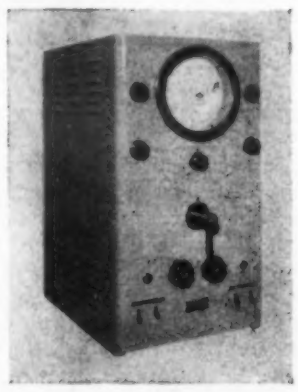


Developed especially for handling wide range of granular and powdered food products and making round, rectangular or specially shaped briquettes at rates as high as 40 per minute for cakes up to 4 x 4 inches with die fill of 4 inches, No. 280-C press is of special design. Fully automatic in operation, these presses are self-contained and, if required, can be furnished to apply simultaneous pressure from both above and below to full rated 100-ton capacity of machine.

Features include variable speed drive which may be adjusted in accordance with material flow, thus assuring maximum production, power requirement of 10 to 15 horsepower, toggle action which gives relatively slow smooth squeeze in final closing and producing briquettes which are uniformly hard and dense. Operation is readily controlled by combined clutch and brake which starts and stops machine instantly, even under full compression load. Machine is variation of standard No. 280 machine which is designed for debulking chemicals, forming powdered metals and making plastic or ceramic parts. Made by **F. J. Stokes Machine Co.,** 5964 Tabor Rd., Olney P. O., Philadelphia 20, Pa.

▲ Mention Item NED-2250 when writing ▲

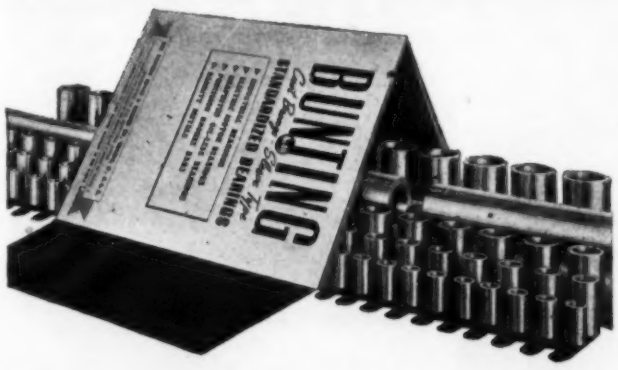
INSULATION TESTER



Testing of faulty insulation and winding dissymmetries in motors, coils, generators and transformers is readily performed with this electronic winding-insulation tester. Employing principle of balance and comparison, instrument simultaneously checks turn-to-turn, coil-to-turn, coil-to-coil and coil-to-ground insulation. It simulates qualitatively such procedures as resistance, impedance-balance, turn-balance and complete high potential tests with single voltage application. Unit is particularly suited to testing completed windings of three-phase, low-voltage rotating machines, although it is also suitable for checking windings of single-phase, two-phase and direct current motors and transformers whose insulation is not designed to withstand more than 10 kilovolts.

Tester consists of repeating type, surge-voltage generator; cathode ray oscilloscope and synchronously driven switching equipment, all enclosed in steel cabinet which is especially designed for bench mounting. Oscilloscope is mounted at eye level height where it can be seen easily by operator and all controls are conveniently arranged. Adequate safety protection has been built into equipment. Made by **General Electric Co.,** Special Products Div., Schenectady, N. Y.

▲ Mention Item NED-2251 when writing ▲



● Keep a Bunting Catalog handy. Often it affords a quick, easy solution to your need for completely finished Bronze Bearings and factory-finished Bearing Bronze Bars. A copy will be sent promptly on request.

The Bunting Brass & Bronze Company
Toledo, Ohio, U. S. A.
WAREHOUSES IN PRINCIPAL CITIES

▲ Mention Item NED-2252 when writing ▲

For DROP FORGINGS
Write Ritco

RITCO's bright finish drop forgings save machining time. Produced to your specifications, they are uniformly strong, accurate and smoothly finished. Let us know your requirements.

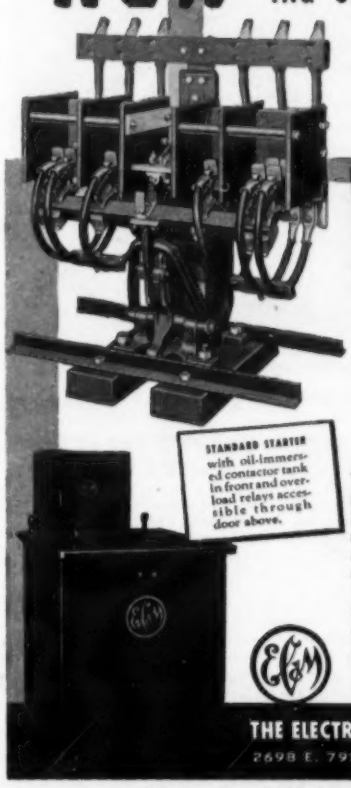
SPECIAL BOLTS, NUTS & STUDS • DROP FORGING & DIE SINKING • HEAT TREATING • PARKERIZING
SCREW MACHINE PRODUCTS
SPRAYED METAL SERVICE

RITCO — We will gladly quote on your specifications. CATALOG ON REQUEST

RHODE ISLAND TOOL CO.
148 West River St., Providence 1, Rhode Island
Serving American Industry Since 1834

▲ Mention Item NED-2253 when writing ▲

NEW 50,000 KVA INTERRUPTING CAPACITY MOTOR STARTERS BY EC&M



Also Available in 25,000 KVA and Moderate Interrupting Capacity

These heavy-duty starters, for full voltage starting of **2300 volt** and **4600 volt** motors, are of magnetic contactor design—suitable for both severe, repetitive starting and inching applications.

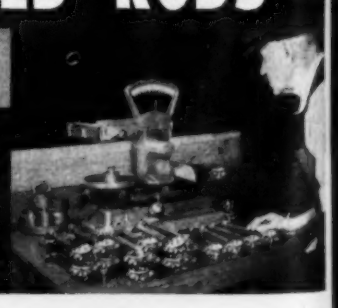
Where equipment with high interrupting capacity is required, 25,000 and 50,000 KVA Starters are recommended. Also available are moderate interrupting capacity starters for 2300 volts. Reversing starters have two moderate capacity contactors, mechanically and electrically interlocked and mounted in one tank. Write for copy of new Bulletin 1062-C.

THE ELECTRIC CONTROLLER & MFG. CO.
2698 E. 79TH ST. CLEVELAND 4, OHIO

▲ Mention Item NED-2254 when writing ▲

BALANCED RODS

Another PLUS FEATURE IN ALL WISCONSIN *Air-Cooled* ENGINES



Every connecting rod, in every Wisconsin Air-Cooled Engine, is precision-balanced to eliminate all weight variations in excess of ¼-ounce per rod.

This is admittedly cutting it pretty fine for a rough-and-ready heavy-duty engine . . . but not too fine for these fine engines. Smooth operation, reduction of vibration to a negligible minimum, prevention of excessive wear . . . these are factors that can be controlled only by the most meticulous care and attention to such small details as this in building an engine.

The *value* of this attention comes into play when a Wisconsin Air-Cooled Engine powers your equipment.

Most H.P. per pound **WISCONSIN MOTOR Corporation**
MILWAUKEE 14, WISCONSIN, U. S. A.
World's Largest Builders of Heavy-Duty Air-Cooled Engines

▲ Mention Item NED-2255 when writing ▲

New Turco Cleaner Improves Electroplating

Turco Prosolv *B* insures chemical and physical cleanliness essential to 100% bonding to steel of zinc, cadmium, chromium, etc. Removes all oil, grease, paint, smut, rust preventive compound. Contains no soap; leaves no deposit. Rinsing is complete, although parts may have dried.

This outstanding new material may be used for still tank, anodic and cathodic cleaning, which simplifies plant procedure where both processes are employed.

Highly concentrated, completely soluble in hot or cold water, Turco Prosolv *B* is 100% active; there is no waste. Call the Turco Field Service Man, or write for Bulletin NED-4.

Turco PRODUCTS, INC.

SPECIALIZED INDUSTRIAL CHEMICAL COMPOUNDS

Main Office and Factory: 6135 S. Central Ave., Los Angeles 1 • *Southern Factory:* 1606 Henderson St., Houston 10, Tex. • *Chicago Factory:* 125 W. 46th St., Chicago • *Service-Men and Warehouse Stocks in All Principal Cities*

▲ Mention Item NED-2256 when writing ▲

GEARS... GUNS... AND MEN!

Today's victories of our armed forces are the result of their superior fire power on land and sea . . . and in the air — a superiority attained by design engineers working in conjunction with the army and navy ordnance departments. Victory and success depend on gun calibre and range . . . also its maneuverability and the clock-like precision of the firing mechanisms. . . . D.O.James precision-made gears are important controlling factors in attaining the maximum fire power and efficiency of many of the guns now being so successfully used by our armed forces. . . . Accurately conforming to these design requirements has been an every-day "must" in our organization for over 55 years in the design, engineering and manufacture of all types of gears and gear speed reducers.

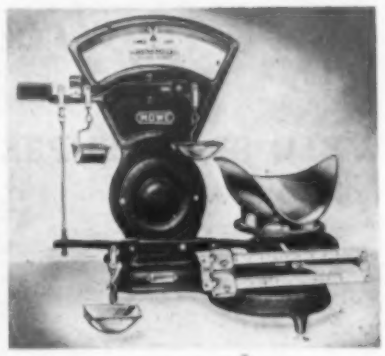
D.O.James

ESTABLISHED 1888

D.O.JAMES MANUFACTURING CO.
1140 W. Monroe St., Chicago, U.S.A.

▲ Mention Item NED-2257 when writing ▲

COUNTING SCALE



High sensitivity provided by third pan attached to lower beam lever of this type 1133-C double ratio scale is claimed to adapt it for accurate counting of small parts. Of fan bench type, scale provides for quick, accurate weighing of materials in shipping, receiving and production departments as well as for inventory or similar counts of small parts. No ratio charts, reference tables or mental calculations are required.

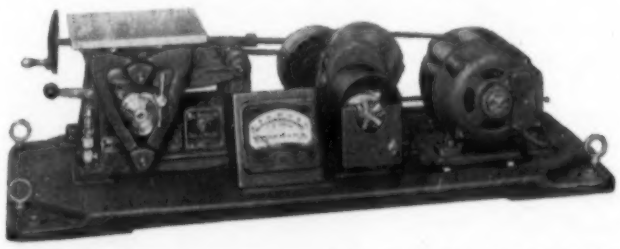
Designed for use with high ratio pan only, third pan gives ratio of 10 to 1 between these two pans. Sensitivity of this combination is more than ten times greater than that between platform and regular 10 to 1 pan. Three pan counting scales are available in 100:1-10:1-10:1 and 99:1-9:1-9:1 combinations. Other ratios may be supplied on special order.

Of pendulum construction, scale has total counting capacity of 40 pounds and total weighing capacity provided by two beams of 20 pounds in ounces. Target type flush indicator is claimed to eliminate parallax and provide easy "over and under" determination. Platform measures 8¾ inches in diameter and is beaded to hold 19½ x 10 x 6-inch scoop. Accessories for illuminating and magnifying reading point are available. Made by **The Howe Scale Co.**, Rutland, Vt.

▲ Mention Item NED-2258 when writing ▲

VIBRATION FATIGUE TESTER

Featuring automatic cycling, model 10V vibration fatigue testing machine has table measuring 8 x 8 inches and handles

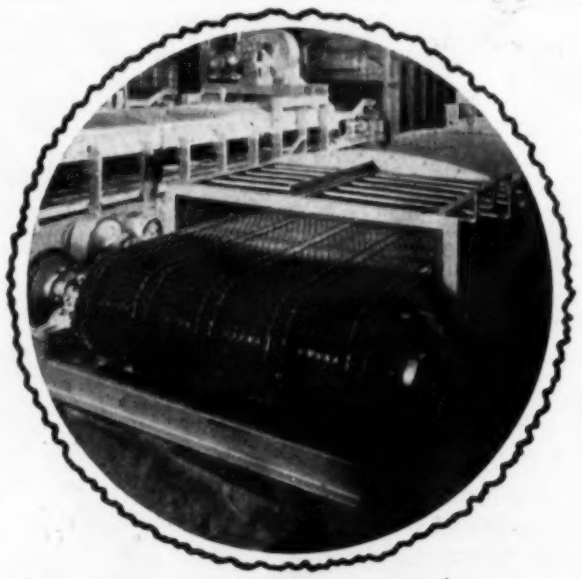


parts weighing up to 10 pounds. Tapped holes in table provide for attaching parts to be checked. V-frame mounting minimizes stress on eccentric and connecting rod. Vibration mechanism runs in oil bath.

Vibration in simple harmonic motion is produced vertically. Acceleration or rate of change of velocity is controlled automatically by device which changes frequency from 10 cycles per second to 55 cycles per second and back again continuously and uniformly, complete cycle requiring 1 minute. Acceleration can also be adjusted manually from 10 to 60 cycles per second. Maximum capacity is 37 times gravity.

Base is drilled at corners for mounting on bench or bolting to foundation. Power is provided by ½-horsepower split phase motor. Vibration conditions actually encountered in service are easily duplicated and defects in design or construction corrected. Made by **All American Tool & Mfg. Co.**, 1010 W. Fullerton Ave., Chicago 14, Ill.

▲ Mention Item NED-2259 when writing ▲



Aged Beyond Our Years

Since Pearl Harbor, the vital necessity for doing the impossible with Audubon Metalwove Belts has put us up to about 1950 or 1960 in their design and performance. What we've learned in wartime will be of real benefit to the post-war re-conversion plans of various industries, many of which previously thought they could not use woven wire conveying or processing belts. New designs to economically meet every condition. New constructions for longer, freedom-from-breakdown service. New experience, born of wartime "musts" to help you solve problems of post-war manufacturing and competition. Write us now.

AUDUBON WIRE CLOTH CORPORATION
Subsidiary of Manganese Steel Forge Co.
2803 CASTOR AVE., PHILADELPHIA, PA.

▲ Mention Item NED-2260 when writing ▲

SPEEDY AIR VISE

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

• Speedy Air Vise helps workers get out more and better work—in less time! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce. Operates from air line or individual compressor, exerting a grip of 15 times air line pressure. Jaw opens up to 3 inches, easily fitted to hold castings, parts, jigs, etc. Speeds up every drilling, light milling, tapping and assembly operation. Compact, sturdy, trouble-free, low in cost! ••••• *Speedy Air Vise, complete with Foot Control Valve, Air Hose and Fittings, only* $24

Prompt Delivery from Your Supplier or Write Direct.

W. R. BROWN CORPORATION
5716 Armitage Avenue • Chicago 39, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

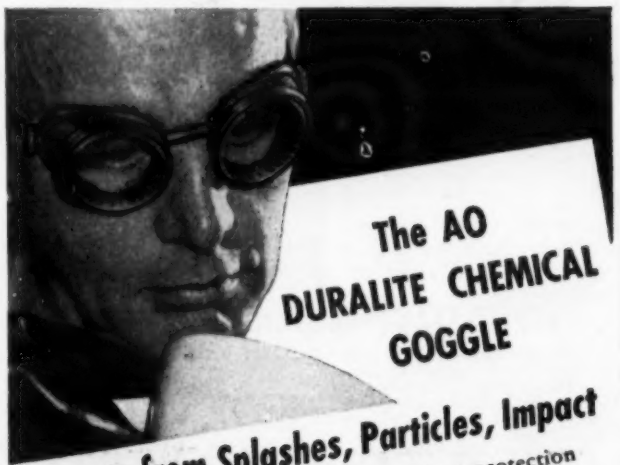
▲ Mention Item NED-2261 when writing ▲

In instruments of communications of every description, parts of National Vulcanized Fibre and Phenolite, laminated Bakelite, have extensive and varied use. These possess great dielectric strength, lightness in weight and exceptional wearing qualities.

"BACK THE ATTACK" with WAR BONDS

NATIONAL VULCANIZED FIBRE CO.
Offices in Principal Cities Wilmington, Delaware

▲ Mention Item NED-2262 when writing ▲



Protects from Splashes, Particles, Impact

The process plant worker needs the best protection he can obtain from the common danger of fine particles, as well as from flying chips and splashes of chemicals. That's why he needs the AO Duralite Chemical Goggle—for this equipment is especially designed to give maximum possible protection against *all three* of these hazards. And it is comfortable to wear.

Ask your AO Safety Representative to demonstrate to you the combination of features found in the AO Duralite Chemical Goggle. Call your AO Branch Office today.

American Optical COMPANY
SOUTHBRIDGE, MASSACHUSETTS

▲ Mention Item NED-2263 when writing ▲

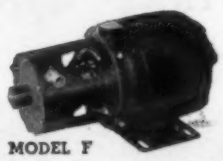
▲ Mention Item NED-2268 when writing ▲

EASTERN *Industrial* PUMPS

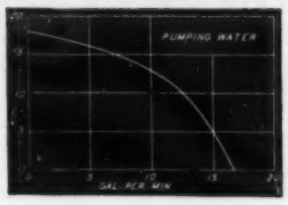
The industrial models shown here are part of the famous Eastern Midget Pump line of over 300 pump models in both centrifugal and positive pressure design ranging in power from 1/100 H. P. to ¾ H. P. Built to perform in the same manner which has made the Eastern line of pumps famous for performance where a minimum of size and weight is desired. Note performance charts below.

SINGLE STAGE CENTRIFUGAL PUMPS

A heavy duty compact pump designed for continuous operation in applications requiring sizable volumes or pressures with a minimum expenditure of space and weight. Available with either stuffing box or rotary seal. Pump and motor close-coupled. Open vane type impeller mounted directly on the motor shaft extension eliminates need of bearings in the pump proper.



MODEL F



Size: 11½" x 6½" x 6¾"; Weight: 35 lbs.

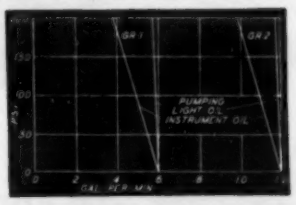
Alloys: Available in Cast Iron, Bronze, Stainless Steel, Monel Metal and Hastelloy

Power: 1/3 H. P. in semi-enclosed, totally enclosed or explosion proof frames

POSITIVE PRESSURE GEAR PUMPS

MODEL GR-2

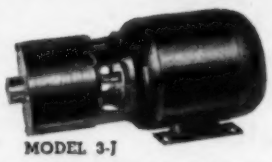
A series of compact, positive pressure, spur gear pumps. Quiet and efficient in operation. Designed for dependable flow at high pressures and for continuous duty operation. Used frequently for pumping light or heavy oils, fuel oil, glycerin, glycol and other organic liquids. Pumps are standard with hardened steel gears and therefore not suitable for pumping water. Where a quantity is desired, however, they can be equipped with gears of non-rusting alloys. Self priming. Constructed of cast iron with hardened steel gears and is close-coupled to the motor. Equipped with bronze faced rotary seal.



Size: 11¾" x 5½" x 5¾"; Weight: 23 lbs.

MULTI-STAGE CENTRIFUGAL PUMPS

A three-stage heavy duty centrifugal pump for pumping moderate quantities of liquids against higher pressures. Delivery can be stepped down to a mere trickle without harming the pump. Models are of the close-coupled types. The open vane impellers in each of the three pump chambers are mounted directly on the motor shaft extension. No internal pump bearings are necessary. Available with both stuffing box and rotary seal.

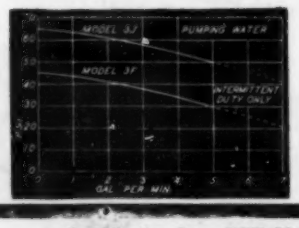


MODEL 3-J

Size: 17¼" x 8½" x 10¼"; Weight: 50 lbs.

Alloys: Available in Cast Iron, Bronze, Stainless Steel, Monel Metal and Hastelloy. Quotations on other alloys on request.

Power: ¾ H. P. Heavy Duty General Electric ball bearing motor in various frame enclosures and for almost all current requirements.

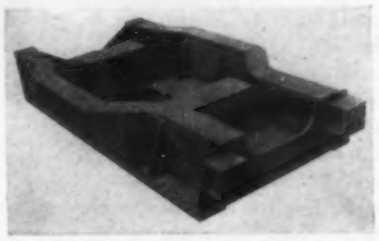


EASTERN ENGINEERING CO.
47 FOX STREET
NEW HAVEN 6, CONN.

▲ Mention Item NED-2269 when writing ▲

NEW *Applications*

WELD SPATTER PREVENTIVE



Over 40 per cent of cleaning time normally required after stress relief heat treatment of welded structure is saved through accidentally discovered use of weld spatter preventive. In fabrication of welded steel bases having many ribs welded at right angles to steel plates, weld spatter was prevented from sticking through application of No-Spat. Because brush application took too much time, Alex Dawson, welding foreman at Republic Structural Iron Works, designed simple spray to eliminate tedious brushing method in applying spatter preventive.

Spray method covered large surface of structure. It was discovered during stress relieving procedure that portion of base coated with preventive was much easier to clean than uncoated portion. Mill scale was loose and readily removed. Consequently, entire structure is now coated with No-Spat both before and after welding. Bases are protected from rust during open air storage prior to stress relieving. Cleaning time has been reduced from 3 hours to 1¾ hours. Final surface is cleaner and smoother to receive priming coat. No-Spat made by Midland Paint & Varnish Co., 9115 Reno Ave., Cleveland, O.

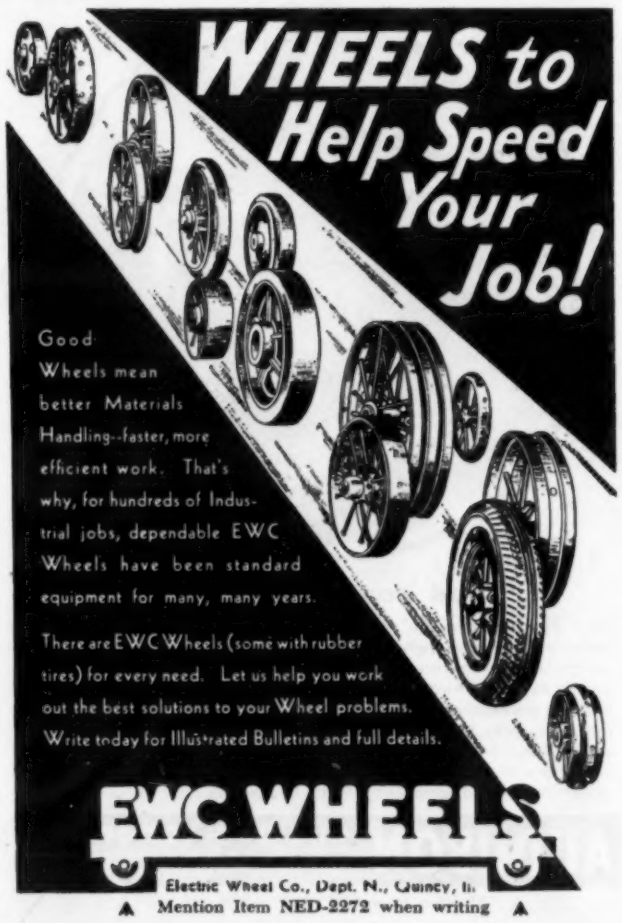
▲ Mention Item NED-2270 when writing ▲

POLISHING WHEEL WASHER

Designed to save time and effort of polishers, reduce wear on diamonds and avoid irregular cutting of wheels to re-head them, this wheel washer is self-contained and can be plugged into any electric outlet. It extends wheel life by uniform head removal by the wet method which is preferred by many polishers. It is particularly adapted to leather covered wood, strap-faced wheels.

Several wheel heads can be gradually and uniformly soaked off at one time. Immersion of bottom of rollers in water makes it possible to apply thin film of water to each wheel's face so that abrasive is removed without injury to wheel body. Wheels of different diameters up to 24 inches can be separated by inserting wheel separating rods. Rollers are driven by ¼-horsepower, gear type, 110/220-volt, 60-cycle, single phase motor. Made by Divine Brothers Co., 104 Whitesboro St., Utica, N. Y.

▲ Mention Item NED-2271 when writing ▲



▲ Mention Item NED-2272 when writing ▲

I LIKE 'EM TOUGH!

TASGON

LOOSENS
Rusty Pipes; Frozen Nuts, Painted Bolts

CLEANS
Tools, Valves, Machines

● Save time and labor! Use lightning-fast Tasgon—the most effective penetrating oil and rust solvent you can buy. By the unique principle of colloidal penetration Tasgon loosens and cleans fast—does the toughest jobs in record time. Try Tasgon today! Get it at your mill supply house or send 10c for sample can.

SAMUEL CABOT, INC.
1415 OLIVER BLDG. · BOSTON, MASS.

▲ Mention Item NED-2273 when writing ▲

1 MARKAL PAINTSTIKS make clear positive, easy-to-read marks on any material—metal, lumber, rubber, plastics, glass, stone, etc.

2 MARKAL PAINTSTIK markings are permanent. They stay on. Sun and weather won't touch them.

3 Smeary paint buckets and brushes are out for the duration — and forever, too. Carry a MARKAL PAINTSTIK in your pocket; no mess, no fuss.

4 MARKAL PAINTSTIKS are made for cold, wet, dry, oily, or hot surfaces up to 1800 F. There's a specific type MARKAL PAINTSTIK for every marking job.

Write for Samples, Literature

Choice of Colors

MARKAL CO. 6-L, EAST LAKE ST. CHICAGO 1, ILL.
"Originators of Paint Sticks"

▲ Mention Item NED-2274 when writing ▲

4 CALIBRATION RANGES . . . wider dial graduations for easier, faster reading, more accurate tension tightening. PROVED 98% ACCURATE under most severe conditions.

MOSSBERG TORQUE TOOLS are widely used by the Navy, leading aircraft makers, automotive and machine assembly and maintenance shops, on railroads, Diesels and other marine power plants.

Let Mossberg Torque Tools prove their worth to you! Write for complete information.

APCO MOSSBERG COMPANY
161 Lamb Street, Attleboro, Mass., U. S. A.

▲ Mention Item NED-2275 when writing ▲

COMPRESSED AIR DRIED TO *BELOW* ZERO DEWPOINTS

- For instrument lines
- For process work
- For inspection and assembly departments

ARMY E NAVY

Kemp KSG Silica-Gel Adsorptive Dryers are the standard in modern industrial applications. For Bulletin T25C write **The C. M. Kemp Mfg. Co., 405 East Oliver Street, Baltimore, Maryland.**

KEMP of BALTIMORE

▲ Mention Item NED-2276 when writing ▲

SEES TELLS CONTROLS FACTS

You get far more from Hays Automatic Combustion Control than just an accurate statement of facts. You get a Control System which automatically makes certain *that the facts are what you want them to be.*

Your boiler room may show similar vital savings. Ask Hays to make a survey and recommendation—there's no obligation and it's usually worth while in savings. The new Combustion Control Catalog is full of valuable data, write for it.

The HAYS CORPORATION
COMBUSTION INSTRUMENTS AND CONTROL
MICHIGAN CITY, INDIANA, U.S.A.

▲ Mention Item NED-2277 when writing ▲

I SAID, "SHOW ME"
(AND THEY DID)

"When the Por-os-way people figured they might boost grinding production on "J" metal cutter heads I laughed . . . too soon. Por-os-way actually gives us 500% more production than any other wheel we've used." This is not an isolated case. Por-os-way usually produces so much faster when first tried that operators, satisfied, don't push it to the limit. It's amazing how this open structure precision wheel increases production, and *decreases cost;* how it bites deep and cool, and resists loading by natural "chip clearance"; how the same wheel can be used for rough grinding AND for precision finishing. Write today for facts about Por-os-way.

A. P. DE SANNO & SON, INC.
446 Wheatland Street,
Phoenixville, Penna.
SINCE 1893

2 TO 5 TIMES MORE PRODUCTION PER MAN PER MACHINE

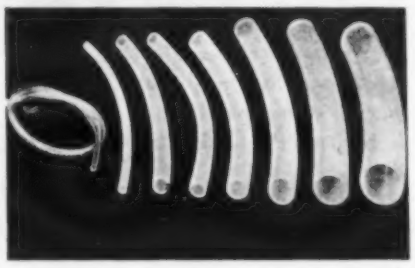
*T. M. Reg. U. S. Pat. Office
Copyright, 1944, A. P. de Sanno & Son, Inc.

RADIAC*
POR-OS-WAY*
NEW YORK • CHICAGO • PITTSBURGH
CLEVELAND • DETROIT • LOS ANGELES

▲ Mention Item NED-2278 when writing ▲

NEW Processes AND Materials

SOLVENTPROOF TUBING



Fully transparent and resistant to most solvents, this Compar vinyl resin flexible tubing is applicable for aircraft and other industrial uses. Contents are always visible, indicating widespread laboratory applications. It is particularly adaptable for handling organic solvents at low pressures and at room temperatures.

Having lowest permeability to gases of all natural and synthetic rubber-like materials and being unaffected by such gases as freon, methyl-chloride, methyl bromide, phosgene, mustard, propane, butane and water gas, further applications are apparent. It is being used as temporary instrument lines for test flights. It may be filled with mercury to permit photographic recording of field movements in checking instruments. Made by **Resistoflex Corp.,** Dept. NED, Belleville, N. J.

▲ Mention Item NED-2279 when writing ▲

GRINDING COOLANT

Mixed with water to form grinding fluid which is claimed to eliminate pick-up, grinding checks, glazing, burning and distortion, Microgrind No. 32 is adaptable for use on all grinding, honing and super finishing operations. Additional claims for this material are development of super finishes free from glaze, elimination of two-thirds of normal wheel dressings, fast cutting and as much as 300 per cent increase in wheel life. Made by **Quaker Chemical Products Corp.,** Conshohocken, Pa.

▲ Mention Item NED-2280 when writing ▲

FUEL ADDITIVE

In addition to maintaining clean fuel systems and improving motor operation, Motor-Fizik has been improved so that it acts also as gasoline tank anti-freeze. To prevent winter time gas line freezing, this material is added to gasoline in tank. It is further claimed to prevent rusting or corrosion in gasoline tanks of stored automobiles. It has high affinity for water and blends it into solution with gasoline by acting as mutual solvent. Fuel lines are thus effectively cleaned and dehydrated. Made by **The Curran Corp.,** Dowling Bldg., Everett, Mass.

▲ Mention Item NED-2281 when writing ▲

Boots Nuts were tested on R. H. Macy & Company's trucks like this one.

THE above is convincing proof that Boots All-Metal, Self-Locking Nuts can save thousands of dollars—wherever vibration loosens ordinary fastenings.

Boots Nuts will materially reduce maintenance costs by *eliminating* periodic tightening check-ups.

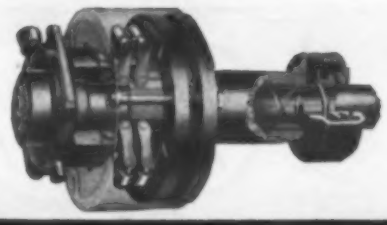
Boots are one-piece, all-metal, hence unaffected by the corrosive action of oil, water and chemicals. They can be used again and again without accelerated locking loss.

The ALL-METAL lock is built in here

ROL-TOP. This nut, for the duration used exclusively on all types of aircraft engines, is the type of Boots All-Metal, Self-Locking Nut mentioned in the above statement.

BOOTS SELF-LOCKING NUTS
"There's No Excuse for a Nut Shaking Loose"
Boots Aircraft Nut Corporation • General Offices, New Canaan, Conn.

▲ Mention Item NED-2282 when writing ▲



TO PREVENT-

LOSS OF TIME AND LABOR.

drive your productive machinery by the powerful, persistent torque developed by MULE-PULL CLUTCHES . . . it saves time and boosts production by the smooth and instant acceleration it gives. The Loose Sleeves of these Clutches have RING-OILING lubrication which prevents ground-out bearings and avoids costly repairs. The single-arm, anti-friction ROLLER TOGGLES which actuate these Clutches give high horse-power capacity; require no lubrication and are free from repairs even under constant in-and-out engagement.

SEND FOR BULLETIN No. 25-D

MULE-PULL CLUTCHES

BROWN ENGINEERING CO. 129 N. THIRD ST. READING, PA.

▲ Mention Item NED-2283 when writing ▲

JOHNSON BRONZE SLEEVE TYPE BEARINGS

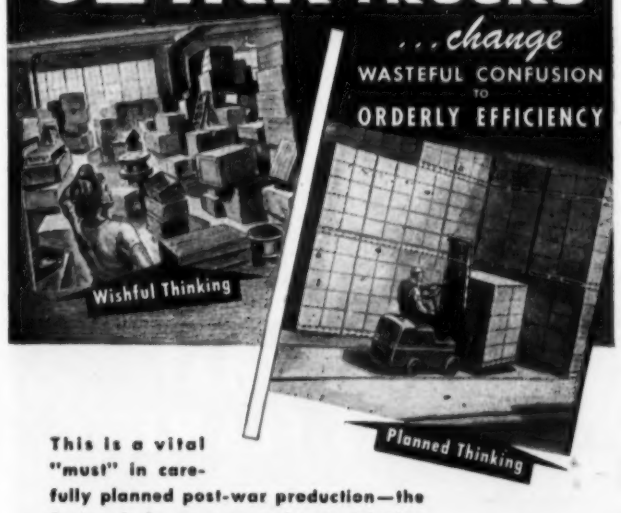
Ready to use....

- Every Johnson GENERAL PURPOSE Bearing is completely machined to standard tolerances . . . ready for immediate installation. From our stock list of over 850 sizes you can buy exactly according to your needs. They are ideal for maintenance or new equipment. Write for our new catalogue and then try them on your next job. Satisfaction guaranteed.

JOHNSON BRONZE
SLEEVE BEARING HEADQUARTERS
580 S. MILL STREET NEW CASTLE, PA.

▲ Mention Item NED-2284 when writing ▲

CLARK FORK TRUCKS *. . . change* WASTEFUL CONFUSION TO ORDERLY EFFICIENCY



This is a vital "must" in carefully planned post-war production—the fast, orderly movement of materials that can come only through intelligent planning. Clark Fork Trucks are translating just such sound planning into profitable action—saving time, floor space and money.

Clark engineers can help you—always ready. Write us.

A Product of CLARK EQUIPMENT COMPANY

CLARK TRUCTRACTOR
DIVISION OF CLARK EQUIPMENT COMPANY
BATTLE CREEK, MICHIGAN, U.S.A.

▲ Mention Item NED-2285 when writing ▲

WITH MATTHEWS
Triumph Holder

Recommended for average, medium or light duty stamping of industrial products with interchangeable letters, figures or symbols..the Triumph is our most economical..most versatile steel type holder.

Write for Catalog 146-A

JAS. H. MATTHEWS & CO.
3943 Forbes Street Pittsburgh 13 Pa.
Branch Plants
New York, Boston, Chicago, Philadelphia, Newark, Syracuse
District Sales Offices
Cleveland Detroit Hartford Birmingham

▲ Mention Item NED-2286 when writing ▲

FOR THE BUSHING *you* NEED

XLO

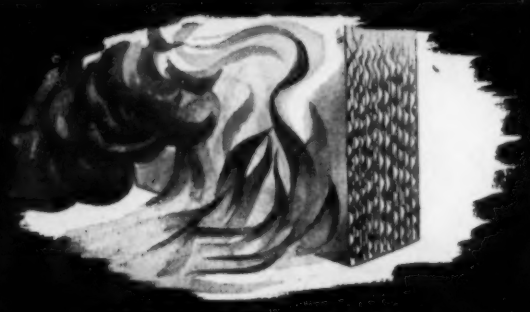
check this book!

Ex-Cell-O Bulletin 11882 will help you select your drill jig bushing requirements. Send for it today.

EX-CELL-O CORPORATION
Detroit 6, Michigan

▲ Mention Item NED-2287 when writing ▲

PAPERS FOR INDUSTRY



PAPER THAT STOPS FLAME

Designed to protect equipment, material and lives against fire. This engineered paper will char, but will not flame or smolder, is another example of Central's papers for industry.

Paper is an economical, flexible and in peace time, abundant material—let our laboratories work on your post-war ideas now.

REG. U.S. PAT. OFF.

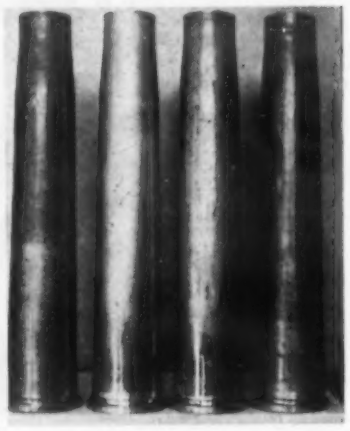
CENTRALINE SPECIALTY PAPERS

CENTRAL PAPER COMPANY INC.
2456 Lakeshore Drive, Muskegon, Michigan

▲ Mention Item NED-2288 when writing ▲

New Processes & Materials

ALKALI BRASS CLEANER



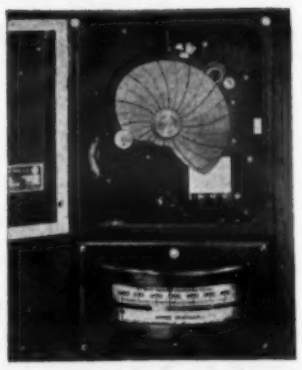
Furnished in free flowing powder form, No. 1919 alkali cleaner is particularly useful in producing brass cartridge cases. Readily soluble in warm water, powder is safe to use, gives off no harmful vapors and has such low sodium oxide content as to be harmless to skin or clothing. Finished cases have true brass appearance.

Cleaner is also applicable for cleaning of steel parts. It removes all traces of oil and dirt, as well as finger prints. It is especially suitable in preparation for plating or final finishing. Cleaner will not attack tin, even at boiling temperature. Stainless steel is also readily cleaned.

Material may be used in standard cleaning equipment and formulas are available for still tanks or power washing units. Made by **Nielco Laboratories,** 19720-24 Florence Rd., Detroit 19, Mich.

▲ Mention Item NED-2289 when writing ▲

CONTROL INSTRUMENTS



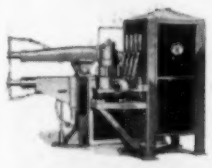
Designed to enforce any desired heating or cooling program, control instruments known as Chronotrols provide completely automatic temperature regulation, regardless of changes in temperature desired for given process or application. Temperature cycle desired is cut on disc and its rotation by synchronous motor moves temperature setting lever of control instrument.

Instruments are offered in twenty-five models, including ten for proportioning control and others for two position on-off and three position on-intermediate-off control for high and low temperature applications. Thermometer models are available in recording as well as indicating types.

Absence of mechanical linkage between measuring and control sections of instruments makes possible instant response of control unit to changes in temperature noted by its sensing unit. Frequency of oscillating current flowing between pick-up coils, mounted on temperature control setting index, is changed when control flag mounted on pointer or pen arm is moved between coils by temperature rise or is moved from between coils by temperature drop. This frequency change in control circuit governs output current of vacuum tube, acting to open relay contacts which, in turn, operate fuel valves or switches. Made by **Wheelco Instruments Co.,** 829 W. Harrison St., Chicago 7, Ill.

▲ Mention Item NED-2290 when writing ▲

by PWC



The PWC STORAGE BATTERY Welder is already in use, welding aluminum for war material.

What a STORAGE BATTERY Welder is:

A modified PWC resistance welder (gun or machine type) with specially designed storage batteries instead of transformers or condensers . . . a simple non-arcing D-C controller-contactor (Patent applied for) . . . a continuous battery-charging low line-load instead of momentarily high power demand . . . Operated with a simple sequence weld-timer.

What a STORAGE BATTERY Welder does:

Eliminates reactance losses between power supply and electrodes . . . Eliminates inductive losses in the welding "loop" . . . Operates with virtually unity power factor . . . Eliminates high voltage "danger" . . . Provides maximum simplicity of maintenance.

What STORAGE BATTERY Welding means:

Lower cost stored energy welding equipment . . . Lower operating cost including vastly lower power cost . . . Ability to spot-weld aluminum even where power line capacity is relatively low . . . High efficiency even when welding at considerable distance from power supply . . . Less critical adjustments to get consistently good welds . . . Vastly simpler to operate.

Ask for Bulletin No. 903

PROGRESSIVE WELDER CO.
SEAM PRODUCTION & BUTT . . . Electric Welding Equipment . . . PORTABLE GUN & PEDESTAL
3050 E. OUTER DRIVE • DETROIT 12, U. S. A.

▲ Mention Item NED-2291 when writing ▲

Soldering?

You can get strong, neat joints pleasantly, easily, rapidly, with

RUBYFLUID . . .

The flux for general soldering and tinning that wins metal workers everywhere by the way it works! Wets out freely, makes solder flow readily and adheres quickly to form a strong and enduring bond. There are no dangerous or disagreeable fumes; no discoloration of metal. In liquid or paste form.

For Stainless Steel

Without special solder or equipment, Ruby's Stainless Steel Flux produces strong neat unions of this metal. No excessive heat; no discoloration.

Order from your jobber or direct

RUBY CHEMICAL CO.
72 McDowell St. • Columbus, Ohio

Rubyfluid

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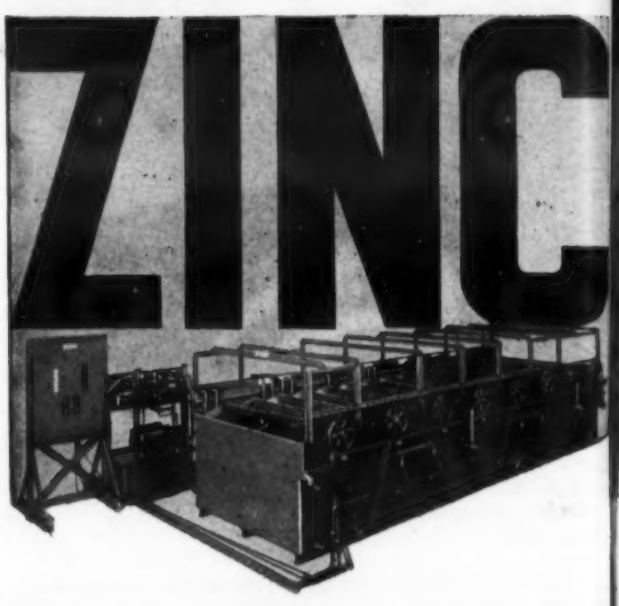


BY UDYLITE

Udylite's years of experience with this practical, inexpensive, protective coating is yours for the asking.

We have the process, nationally known for its efficiency and performance; the equipment, for both plating and dichromating; and the supplies, from chemicals to the efficient ball anode which is an exclusive Udylite development.

The above automatic dichromating machine is a Udylite development for the processing of large quantities of small parts through the complete cycle, from initial rinse to ultimate heat treat. The machine is capable of handling approximately 10 cu. ft. of volume per hour, with excellent uniformity and a minimum of scarring.

Investigate "Zinc by Udylite"—your inquiry will receive our prompt attention.

THE UDYLITE CORPORATION
1651 E. Grand Blvd., Detroit 11, Mich.
Chicago 12, 1943 Walnut Street · Long Island City 1, N. Y., 11-16 44th Drive · Cleveland 3, 4408 Carnegie Ave.

▲ Mention Item NED-2293 when writing ▲

...Send for it today!

The new Felters Catalog gives you the fundamentals of felt functions . . . tells about the different grades and properties of felt . . . the *design* properties of felt . . . the acoustical and insulating qualities of felt . . . and a lot more important information. It is a ready reference . . . an easily understood "short course" in the various uses and applications of felt.

We shall be glad to send you your copy of this new catalog by return mail . . . and, also, if you wish, put your name on the list of those who receive Felters Engineering Bulletins. These bulletins periodically supply specific or timely data about Felters Felt in a way that may well help you in your work.

There is no obligation—just drop us a line today.

The Felters Company
210-M SOUTH STREET • BOSTON, MASSACHUSETTS

▲ Mention Item NED-2294 when writing ▲

HEXACON ELECTRIC SOLDERING IRONS

Expressly designed for the multitude of complex and tedious soldering requirements, the HEXACON Hatchet Type soldering iron has found extensive use because of its extreme ease of manipulation. Perfect balancing—permits long operation with minimum of fatigue. As with all HEXACON units, the Hatchet type is ruggedly constructed, and is tested for twice the intensity required by the Underwriters' Laboratories, assuring greater-than-average service life with economy and efficiency. Operates on AC or DC of any cycle, and is available in voltage ranges from 32 to 250 volts. Equipped with replaceable elements, and all other features of HEXACON Plug Tip Irons.

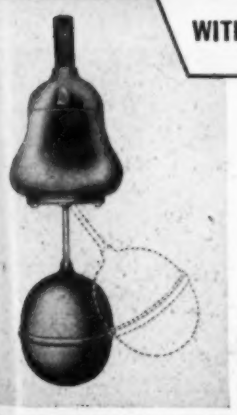
HEXACON ELECTRIC CO. 145 W. Clay Ave. Roselle Pk, N. J.

WRITE FOR LITERATURE
Descriptive bulletins, describing the complete line of HEXACON electric soldering irons, will be sent on request.

HEXACON

▲ Mention Item NED-2295 when writing ▲

Halt SPACE AND MATERIAL Waste WITH THE TELLEVEL

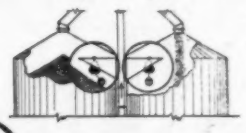


Now is the time to call a halt to waste of vital space and material.

It is easily done with the Tellevel, an inexpensive device that allows automatic flow control in bins, hoppers, tanks, etc.

A rising or falling level of material tips the hanging float-ball to make or break the electric current . . . as the need may be. The Tellevel is used to control the storage of bulk materials or liquids.

...tate the Tellevel for possible ...your plant. Write for descrip-...ulletin No. 440.



STEPHENS-ADAMSON MFG. CO.
...vel—Bin Level · SealMaster Ball Bearings · Controls · Car Loaders · Car Pullers · Winches · ...teMaster Variable Speed Reducers · Saco Speed Reducers
12 RIDGEWAY AVE., AURORA, ILLINOIS

▲ Mention Item NED-2296 when writing ▲

New Processes & Materials

GALVANIZING REPAIR BAR

When rubbed on damaged surface of galvanized materials, heated and brushed until coating sets, this Amco galvanizing bar effects repair of galvanized surfaces so that they will meet Government specifications. Bar is also adaptable for use in repairing containers and maintaining protective galvanized coatings. Quick, easy repairs are made on all galvanized iron parts damaged through welding, bending, during assembly or otherwise. Made by **American Solder & Flux Co.**, 2152 E. Norris St., Philadelphia 25, Pa.

▲ Mention Item NED-2297 when writing ▲

VARNISHED SILK SUBSTITUTE

Available in continuous length rolls of 36 or 72 yards, seamless bias material is offered as alternate for varnished silk. Continuous length eliminates need for splicing 51-inch bias cut strips. Sewed or cemented seams of spliced fabrics often proved bulky or mechanically weak in insulating applications.

This material is thin cotton cloth which is varnished to specified thickness. It is obtainable in either slightly tacky or mica dusted finish. Dielectric strength is 1200 volts per mil and tensile strength is 42 pounds per inch of width. Made by **Irvington Varnish & Insulator Co.**, 6 Argyle Terrace, Irvington 11, N. J.

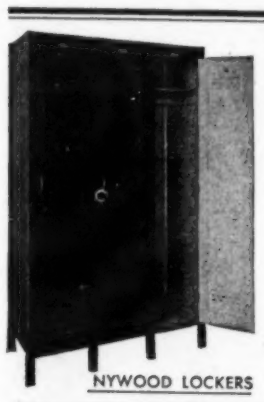
▲ Mention Item NED-2298 when writing ▲

SYNTHETIC RUBBER GLOVES

Available to anyone who can qualify under WPB rubber order R-1, synthetic rubber gloves are made in two styles. Lightweight type of 0.15-inch gage is 10½ inches long and is available in sizes from 7 to 11 in half-sizes inclusive. Second glove is of 0.30-inch gage, 14 inches in length and is made in sizes 10, 10½ and 11. Heavier glove may be had only in straight-finger style.

Sizes and gages of these two gloves are designed to meet greatest average demand. They are claimed to equal in most respects natural rubber gloves and offer in addition, resistance to oil and grease. Made by **The B. F. Goodrich Co.**, Dept. E, 500 South Main St., Akron, Ohio.

▲ Mention Item NED-2299 when writing ▲

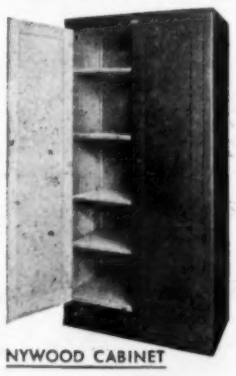


NYWOOD LOCKERS

NYWOOD Lockers
have been selected by the U. S. Government for the general schedule of 1944.

Nywood is the modern substitute for steel in lockers, cabinets, tool stands, shelving, etc. More than 100,000 lockers in use, some buyers reordering 50 and 60 times.

Send for Literature



NYWOOD CABINET

Nywood products are built of sturdy plywood, made termite-proof, resistant to fire and protected against salt water, weather and odors through immersion in special solution. Tough, lacquer exteriors, office green. Interiors, tops and bottoms neutral tone finish resulting from processing solution. Complete line of sizes and sectionizing. Easy assembly. Attractive prices.

STEEL!

ASSEMBLER'S BENCH BINS, STEEL SHOP EQUIPMENT, STEEL STOOLS, STEEL BOXES and ROTABINS can be furnished on satisfactory priority. Your inquiries will be appreciated.

NYCE Metal Products Company
4308 N. Broad St., Phila., Pa. • Phone MIChigan 6463

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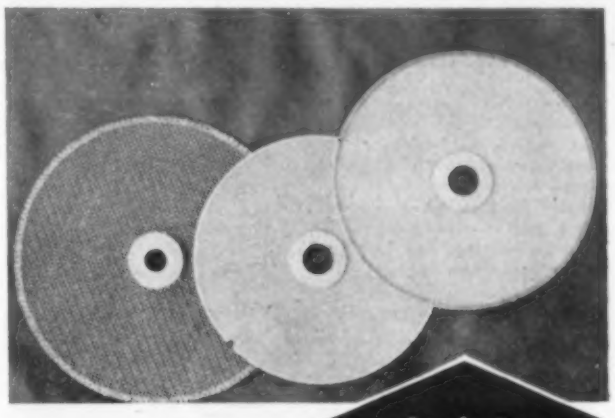

Look to **CAMBRIDGE** for WIRE CLOTH *and* METALLIC FILTER CLOTH FABRICATIONS

Filter leaves, like those shown above, are just one of the many fabrications Cambridge performs in wire and metallic cloths for filtering processes. Fabrications to any specifications are done in all metals and alloys that can be drawn to wire or bar form, such as Monel Metal, Stainless Steel, Pure Nickel, etc. Write for FREE Catalog.

THE CAMBRIDGE WIRE CLOTH CO.
CAMBRIDGE 13, MARYLAND

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Here's What the Accuracy of the SUNNEN PRECISION HONING MACHINE Means to *YOU!*

ABSOLUTE INTERCHANGEABILITY — Because tolerances can be held to within .0001". In fact, accuracy has been held to within .000025" on production jobs. Holes are honed straight and true, without taper or bell-mouth.

LONGER LASTING PARTS — Because it produces a super-smooth finish of from 2 to 3 micro-inches. Bearings, bushings, sleeves, etc., run more smoothly; they can be fitted more closely. The smooth base metal finish, free from high spots, makes parts last longer because they wear more slowly.

In addition, the Sunnen Precision Honing Machine is easy to set up — usually taking less than one minute. Skilled labor is not needed. It's practical, inexpensive, and easy to operate.

Write for free bulletin — or ask a Sunnen engineer to give you complete information on how Sunnen Honing can be used in your plant.

Typical Jobs

SUNNEN PRODUCTS COMPANY 7931 Manchester Ave., St. Louis, Mo.
Canadian Factory, Chatham, Ontario

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Prompt Shipment from Stock!

Today wheels must keep turning . . . shut-downs for repairs and change-overs must be brief, and a good wheel puller is essential to save valuable man and machine hours and prevent breakage of irreplaceable wheels, pulleys and gears.

ARMSTRONG - BRAY GEAR AND WHEEL PULLERS come in types and sizes for all industrial applications.

STEELGRIP Standard Rigid Arm Pullers are of improved design. Will not slip from work. Arms are forged and heat-treated. 2-arm, 3-arm and special designs. 11 types.

CHAINGRIP Universal Pullers pull spoked wheels, solid gears, pinions, etc., even though they are a considerable distance from end of shaft. Proof tested chains have chain hook on one end, and special pulley hook on other. Furnished in 2 sizes.

Write for Catalog today. Be ready for emergencies—to keep wheels turning.

ARMSTRONG - BRAY & CO.
"The Belt Lacing People"
5362 Northwest Highway, Chicago 30, U. S. A.

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Here's QUICK Information about Welded Stainless Tubing

● To help you get quick answers to questions about Carpenter Welded Stainless Tubing, we offer this handy 4-page file folder. The information is presented in condensed form for ready reference. You'll find data on how this tubing is made . . . types, forms, gauges, tests and inspection, and applications. Information on inside polished tubing is included as well as facts on Carpenter's Welded Invar Tubing for low expansion purposes.

Just drop us a note on your company letterhead and we'll start your file folder on its way to your desk—at no obligation, of course.

THE CARPENTER STEEL COMPANY
WELDED ALLOY TUBE DIVISION . . . KENILWORTH, N. J.

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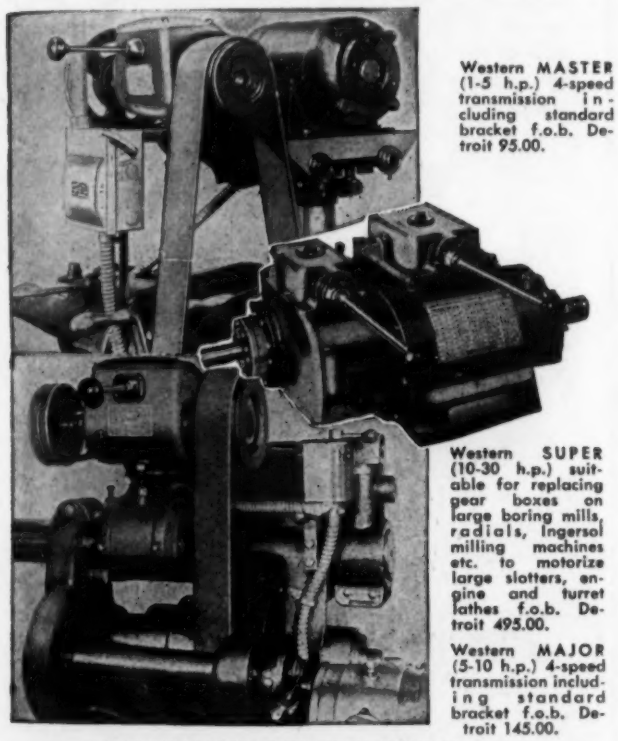

Western MASTER (1-5 h.p.) 4-speed transmission including standard bracket f.o.b. Detroit 95.00.

Western SUPER (10-30 h.p.) suitable for replacing gear boxes on large boring mills, radials, Ingersol milling machines etc. to motorize large slotters, engine and turret lathes f.o.b. Detroit 495.00.

Western MAJOR (5-10 h.p.) 4-speed transmission including standard bracket f.o.b. Detroit 145.00.

SEND FOR NEW FOUR PAGE CATALOG . . .
prompt deliveries on high priorities

up to 30 h. p. For Motorizing Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Slotters, Bolt Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.
WESTERN TRANSMISSIONS
WESTERN MFG. CO., 3400 SCOTTEN, DETROIT, MICHIGAN

▲ Mention Item NED-2305 when writing ▲

New Processes & Materials

INSULATING REFRACTORY

Covering more surface than five full-sized firebrick, Fireblok insulating refractory lining is available in 9 x 24, 9 x 12, 4½ x 24 and 4½ x 12-inch standard sizes and thicknesses of 2½, 3 and 4½ inches. Special sizes and thicknesses can be furnished. Four grades are available for exposed temperatures from 1600 to 2600 degrees Fahr. and back-up use on temperatures from 2000 to 2600 degrees Fahr.

Large size assures economical installation. Material is easy to cut with saw and shape with rasp. Most special shapes can be cut from standard blocks in shop or field. Efficient thermal construction is assured because minimum of joints are required. In reducing number of joints, amount of mortar required is minimized. Made by **Johns-Manville**, 22 E. Fortieth St., New York, N. Y.

▲ Mention Item NED-2306 when writing ▲

ALLOY WELDING ELECTRODE

Producing welding deposits of high strength and high ductility combined with desirable resistance to corrosion, Airco No. 100 coated aluminum-bronze electrode is designed for shielded arc welding and may also be used as filler rod in carbon arc welding. Deposits are claimed to be superior to standard manganese bronze with respect to corrosion resistance and they are equal to it in strength, hardness and ductility.

Electrode may be used in welding most bronzes, manganese and cast iron or steel. It is also suitable for welding manganese bronze in conformation with Federal specifications QQ-B-726b or Navy specifications 49-B-3e for marine propellers and other parts. It can also be used for welding dissimilar metals such as cast iron to brass, steel to malleable iron or joining any two metals which are weldable with aluminum-bronze. Available sizes range from ⅛ to 3/16-inch diameter in 14-inch lengths and ¼-inch in 18-inch lengths. Sizes from 5/16 to ½-inch in 18-inch lengths may be procured on special order. Made by **Air Reduction Sales Co.**, 60 E. Forty-second St., New York 17, N. Y.

▲ Mention Item NED-2307 when writing ▲

DO YOU KNOW?

Distributed free to trade associations, technical schools and industries, "On the Air—The Story of Radio Broadcasting," is sound motion picture which traces development of radio industry from days of wireless telephony to modern times. It covers detailed operations of typical broadcasting day and explains operation of radio. Issued by Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

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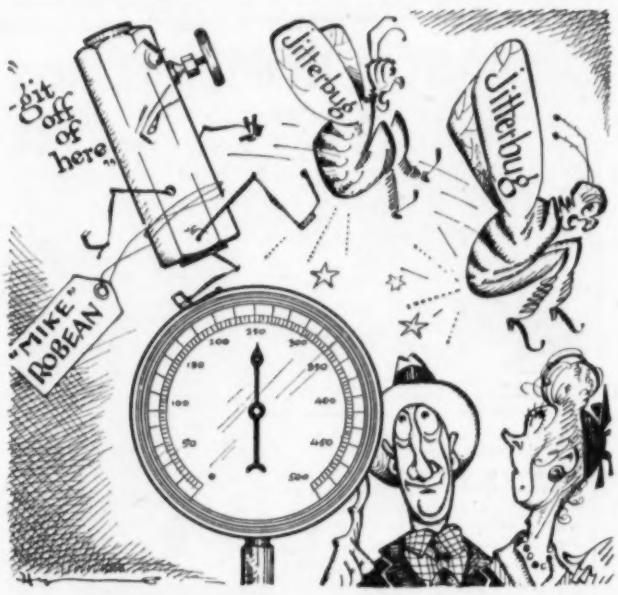

"That ain't cruelty, lady . . . just good engineering horse sense."

Eliminate pulsation of boiler plant pump governors and kill "jitters" of the gauge hand. Ask for Literature.

CAMPBELL MICRO-BEAN
J. A. CAMPBELL CO.
645 E. Wardlow Road Long Beach 7, Calif.

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More power to women with **ARO PNEUMATIC GRINDERS**

★Engineered to deliver more power than average tool of their size ARO Grinders and other ARO Pneumatic Tools get *more work done . . . with less fatigue!*

Ruggedly constructed—simple in design—lightweight and stall-proof, ARO Pneumatic Tools, in addition to grinding are ideal for small tool operations such as drilling, screw driving, nut-setting and many others. Send for complete catalog . . . The ARO Equipment Corporation, Bryan, Ohio

THE ARO EQUIP. CORP. ARO BRYAN, OHIO

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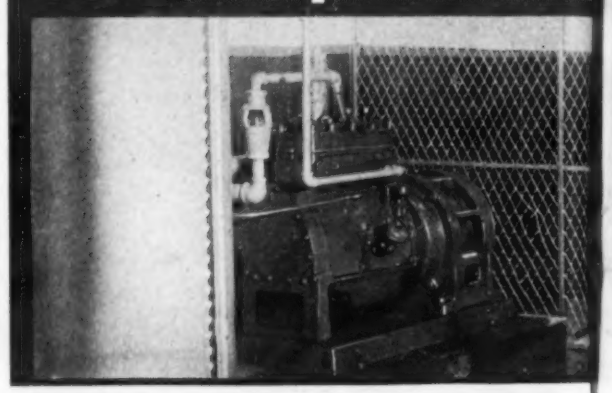
Schramm Air Compressors



. . . for an endless variety of industrial uses

The rugged construction of Schramm's water cooled stationary air compressors gives them perfect balance—frees them of vibration and enables you to get air for any type industrial job.

Pictured here are three Schramm installations—each adapted to a different type job. This is only a small sample of their versatility, as they are installed in hundreds of plants throughout the country.

Schramm advantages: easily bolted directly to any substantial floor . . . compact to reduce headroom and floor space requirements . . . 100% water cooled to provide top efficiency both winter and summer.

Write today for illustrated Bulletin 42-S.

SCHRAMM INC
THE COMPRESSOR PEOPLE
WEST CHESTER PENNSYLVANIA

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MONARCH UNI-POINT RADIAL SAW

For Greater . . . More Accurate . . . Woodworking Production

With this universal power saw one man can turn out 20% more work per hour on most woodworking operations. With ONE POINT CUTTING by which saw blade always enters lumber at same point in table regardless of cross-cut angle, many adjustments are eliminated and much time saved.

Investigate this modern designed saw of permanent accuracy which will enable you to take many short cuts in production cutting.

Send for Catalog No. NE-12

AMERICAN SAW MILL MACHINERY CO.
115 Main St. Hackettstown, N. J. Established 1903
Radial Saws, Saw Benches, Band Saws, Jointers, Planers, Lathes

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PROTECT *Vital* HANDS

All-Neoprene Latex INDUSTRIAL GLOVES

Impermeable to pratically All Acids and Caustics • Highly Resistant to Oils and Greases

NEW COMPLETE LINE

★ **No. 5737-2**
LONG 14" GAUNTLET
GAUGE .030 TO .040
SIZES 10-11-11½-12

★ **No. 5705-5**
SHORT 11" GAUNTLET
GAUGE .020 TO .025
SIZES 9-10-11

★ **No. 5703-5**
LIGHT WEIGHT 10½" LONG
GAUGE .015
SIZES 7-8-9-10-11

★ Request sample and quotation on these extra-serviceable gloves available to you now for industrial purposes only.

Seiberling LATEX PRODUCTS CO.
AKRON • OHIO
354 - 4th Ave., New York City Merchandise Mart, Chicago

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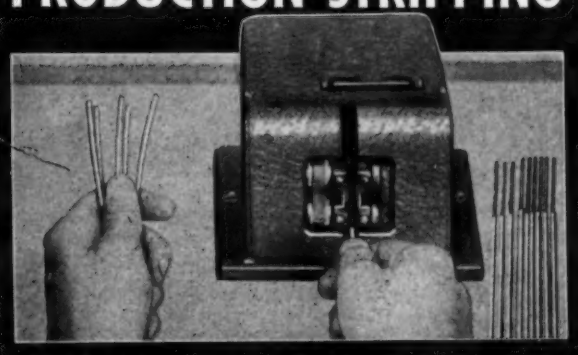
PRODUCTION STRIPPING



IDEAL "HOT-BLADE" ELECTRIC WIRE STRIPPER

A new and improved Wire Stripper. Strips clean—no frayed ends—no nicked wires. Insulation is *burned off* by two electrically heated blades. Quickly strips cotton, silk or rubber from *FINE* stranded or solid wires.

IDEAL—Most Complete Line of Wire Strippers

IDEAL *Sycamore*
★ IDEAL COMMUTATOR DRESSER CO ★
1032 PARK AVENUE SYCAMORE, ILLINOIS
SALES OFFICES IN ALL PRINCIPAL CITIES
IN CANADA: Irving Smith Ltd., Montreal, Quebec

▲ Mention Item NED-2314 when writing ▲

New Processes & Materials

CONDUCTIVE COATINGS

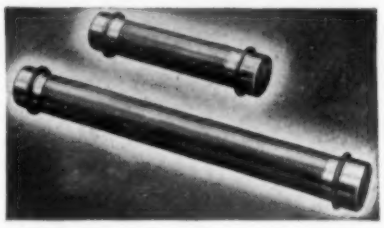
Electrically conductive coatings may be applied to wide variety of non-conductors such as glass, plastics, porcelain, soapstone, wood, cloth and paper by spraying, brushing or dipping with ceramic type composition. Air drying or, in some cases, baking is used.

Containing silver powder, coating produces surface of low electrical resistance and high conductivity. Aging or exposure to sulphides encountered in many electrical applications is said to have only slight effect upon conductivity. Several different formulations are being produced, each designed to meet varying requirements of different base materials and degrees of adherence and film toughness. Coatings are dull, metallic gray in appearance.

Thermoplastic conductive cement is one interesting form. Others include conductive coated cloth and flexible conductive film. Other formulations are available for evaluation purposes as laboratory samples and specimens. Made by **E. I. du Pont de Nemours & Co.**, Electrochemicals Dept., Wilmington 98, Del.

▲ Mention Item NED-2315 when writing ▲

RESISTORS



Capable of operating at high voltages and ambient temperatures, as well as dissipating power, Meg-O-Max resistors use minimum of critical materials. Claimed to be superior to wire-wound types where broad tolerances are permissible, these units can be made in higher resistance values for given physical sizes and can handle similar or higher voltages.

They are formed of series of pressed and sintered ring-shaped segments, electrically joined so as to be non-inductive. Finished units are encased in hermetically sealed glass envelope having ferrule terminals. Finished unit is capable of withstanding aircraft vibration tests, salt water immersion tests and mechanical shocks produced by rapid acceleration.

Units may be used as high voltage bleeders and as coarse accuracy meter multipliers for voltage indicators. Other applications include use in high-voltage networks, measuring equipment, rectifier systems and high-voltage voltage dividers. Type 1 is 5-9/32 inches long, with range of 3600 to 100 ohms. Type 2 is 9-26/32 inches long, having range of 6800 to 100 ohms. Made by **Sprague Specialties Co.**, Resistor Div., 343 Beaver St., North Adams, Mass.

▲ Mention Item NED-2316 when writing ▲

DO YOU KNOW?

Tracing development, research and applications of laminated plastics in all fields, "The Formica Story" is five-reel sound, color motion picture which is available to technical and engineering societies, manufacturers and fabricators. Manufacturing and fabricating processes, as well as diversified uses are covered. Issued by The Formica Insulation Co., 4644 Spring Grove Ave., Cincinnati, O.

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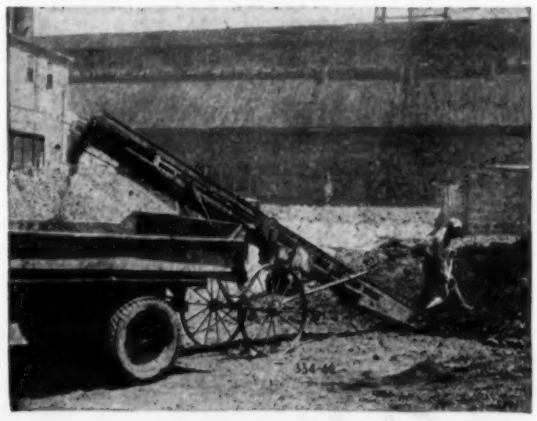

JEFFREY PORTABLE BELT CONVEYOR

Troughed and flat belt types for efficient handling of all classes of loose material. Storage to truck—cars to storage—cars to truck . . . light weight units backed by years of satisfactory service. Also portable scraper conveyors, bucket loaders, car pullers and car unloaders.

The Jeffrey Manufacturing Company
Established 1877
952-99 North Fourth St. Columbus 16, Ohio

Baltimore, Birmingham, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Denver, Detroit, Harlan, Houston, Huntington, W. Va., Milwaukee, New York, Philadelphia, Pittsburgh, St. Louis, Salt Lake City, Scranton

Jeffrey Manufacturing Co., Ltd. of Canada. Head Office & Works: Montreal
Branch Offices: Toronto, Calgary, Vancouver.

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ELECTRICITY FOR ANY JOB ANYWHERE

For a dependable source of electricity on projects remote from commercial power, Onan Electric Plants are proven leaders in the field. More than half of the Armed Forces' total requirements for power plants are built by Onan.

Gasoline-driven . . . Single-unit, compact design . . . Sturdy construction . . . Sound engineering . . . Suitable for mobile, Stationary or emergency service.

Over 65 models, ranging in sizes from 350 to 35,000 watts. 50 to 800 cycles, 110 to 660 volts, A.C.—6 to 4000 volts, D.C.—Also dual A.C.-D.C. output types.

Descriptive literature sent promptly on request. D. W. Onan & Sons, 1911 Royalston Ave., Minneapolis, Minn.

Awarded to each of the four Onan Manufacturing Plants.

ONAN ELECTRIC PLANTS

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Castolin Eutectic

EUTECTIC* (Means Lowest Binding Alloy) LOW TEMPERATURE WELDING

WHY EUTECTIC IS THE FASTEST GROWING WELDING ROD (for oxy-acetylene, metallic arc, etc.) **IN AMERICA**

The acceptance gained by Eutectic Low Temperature Welding Alloys in two short years is unmatched in the Industry. The reason—Eutectic Low Temperature Welding (for salvage, maintenance and production) offers advantages never before combined in any welding process.

HIGH STRENGTH
Eutectic joints equal or surpass parent metal in tensile strength . . . 2 to 3 times stronger than brazing or soldering.

PERFECT MACHINABILITY
Eutectic Alloys bind at safe, lower temperatures, thus eliminating stresses, distortion, brittleness.

MATCHING COLOR
With Eutectic you can have undetectable, color matching welds . . . another advantage over brazing. (Important for salvage)

ALL-AROUND ECONOMY
Thin flowing Eutectic Alloys give stronger joints without fillets . . . Lower temperatures are reached faster and preheating is reduced. Smooth joints eliminate after-machining.

INVESTIGATE EUTECTIC TODAY

Do you weld cast iron, steel, alloy steel, aluminum, brass, bronze, copper, nickel, nickel alloys, Dow-metal? . . . One of 43 Eutectic rods will do a better job and effect considerable economies in your plant.

* Eutectic & Low Temperature Are Reg. U. S. Pat. Off.

EUTECTIC WELDING ALLOYS COMPANY
Originators of the Low Temperature Welding Process
40 Worth Street • New York 13, N. Y.

Eutectic Welding Alloys Co., 40 Worth St., N. Y. 13, N. Y. Dept N4
Please send me:
☐ 8 p. Booklet on Eutectic
☐ Tool Salvage Instruction Poster
☐ 36 p. Eutectic Data Book
☐ Instructive House Organ
Name
Company
Address City

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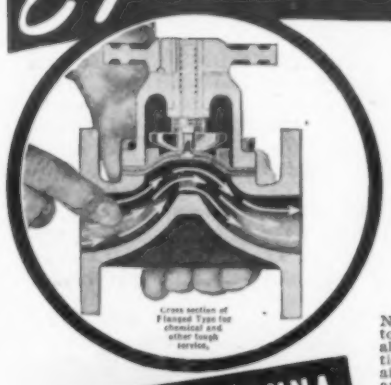
Experience Counts



HILLS-McCANNA GIVE YOU THE BENEFIT OF 12 YEARS APPLICATION EXPERIENCE WITH THIS VALVE!

No other valve lends itself so ideally to the handling of acids, alkalis, alcohols, solvents, aqueous solutions, semi-solids, glues, compressed air, oxygen and acetylene gases, hot and cold water, etc.
Fluids or substances cannot injure the operating mechanism. No packing required—no seats to rework—no corrosion difficulties.
Available in screw and flange types in sizes from ½" to 14".

HILLS-McCANNA
SAUNDERS PATENT
DIAPHRAGM VALVES

Send for Catalog V-41 for details.

Streamlined Flow

NO LEAKS — STICKING — CLOGGING—FREEZING OR BREAKING . . . PRACTICALLY NO MAINTENANCE.

HILLS-McCANNA CO.
2455 NELSON STREET, CHICAGO
PROPORTIONING PUMPS • AIR & WATER VALVES • CHEMICAL VALVES
MARINE VALVES • FORCE-FEED LUBRICATORS • DOWMETAL CASTINGS

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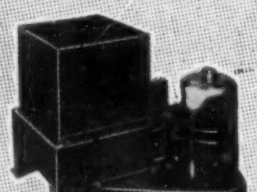
ORDER YOUR EQUIPMENT NOW!

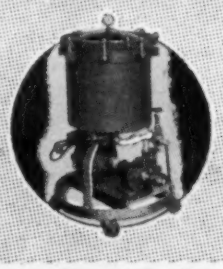
ROTO JR. PROCESSING MACHINE

Outstanding development for wet or dry Roto finishing. Light weight, easily replaceable, with hard wood liners in cylinders. Pneumatic control and dump . . . Larger units for greater production.



CROWN CENTRIFUGAL DRYER

Economical, fast drying, no vibration, long life, low maintenance dryer. Other types of drying equipment available.



SPARKLER *Horizontal Plate* FILTER

Flexible in application, easy to clean, sturdy but light weight, completely enclosed filter. Capacity 100 to 5,000 gallons.

Anodes and Anode Bags • Tampico, Steel and all types of Bristle Brushes • Pumice • Buffing Compositions • Buffs • Felt Wheels • Dipping Baskets • Rubber Aprons and Gloves • Test Sets • Degreasing Solvents • Soap Chips • Other materials necessary for the plating and finishing industry.

WRITE FOR *Free* FOLDERS

MAC DERMID INCORPORATED

The exclusive New England distributors for
THE UDYLITE CORP.
WATERBURY 88, CONNECTICUT

▲ Mention Item NED-2322 when writing ▲

NEW *Literature* AND *Catalogs*

RUBBER CUSHIONED ABRASIVES—Two illustrated booklets contain information on Brightboy rubber cushioned abrasives—one contains prices and dimension tables on wheels and rods for use on grinders, lathes, presses and polishing machines and information on blocks with flat and curved surfaces for metal parts to be worked by hand—other booklet outlines various production procedures and short cuts—issued by Weldon Roberts Rubber Co., 351 Sixth Ave., Newark 7, N. J.

▲ Mention Item NED-2323 when writing ▲

ROLLER LEVELERS—6-page illustrated folder is descriptive of Voss roller levelers—contains several installation photographs with brief description of each, particularly telling something of work on armor plate leveling—issued by Voss Machinery Co., 2894 W. Liberty Ave., Pittsburgh 16, Pa.

▲ Mention Item NED-2324 when writing ▲

ELECTRICAL DUCTS—34-page illustrated bulletin, Section 6000 of catalog No. 37, contains complete description, application data and price information on Saflex plug-in duct, Saflex feeder duct, Square-duct and screw cover duct for electrical distribution systems—issued by Square D Co., 6060 Rivard St., Detroit 11, Mich.

▲ Mention Item NED-2325 when writing ▲

CHEMICAL THERMOMETERS—52-page illustrated catalog No. 44 is descriptive of etched stem laboratory thermometers—specifications are listed and steps in production are shown—issued by Faichney Instrument Corp., Watertown, N. Y.

▲ Mention Item NED-2326 when writing ▲

SHEET METAL WORK—104-page illustrated manual is entitled, "Suggested Shop Problems for Hand Skill Practice"—booklet is designed to prepare men and women to acquire industrial skill needed in aircraft and specialized sheet metal working industries to help war effort and for post-war needs—price is $3.50 post paid—issued by The Metal Crafts Guild, P. O. Box 142, Flatbush Sta., Brooklyn, N. Y.

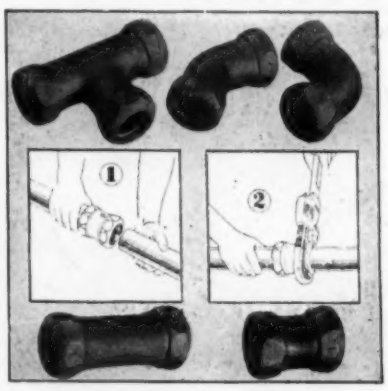
▲ Mention Item NED-2327 when writing ▲

PRESSURE GAGE—12-page illustrated bulletin describes the phenol turret case Duragauge, a standard pressure gage for industry when durability and accuracy are required—includes explanation of rotary movement, design and construction of system and general dimensional drawings—issued by Manning, Maxwell & Moore, Inc., 1943 Elias St., Bridgeport 2, Conn.

▲ Mention Item NED-2328 when writing ▲

FLANGE PACKINGS—4-page illustrated bulletin "Packings Pointers No. 4" defines flange packings, points out advantages and illustrates uses diagrammatically—design features are listed and case histories reviewed—issued by Packings Dept., Graton & Knight Co., Worcester 4, Mass.

▲ Mention Item NED-2329 when writing ▲



COMPLETE LINE OF NO-THREAD PIPE FITTINGS

HANDY is the word for these Dresser Style 65 No-Thread Fittings to join small piping. They come completely assembled and are installed by stabbing over plain pipe-ends and tightening the nuts with an ordinary wrench. No exact pipe fitting—no threading—no delay! Sizes ⅜" through 2

ASK FOR CATALOG 418B

Other ready-made Dresser Couplings, Fittings, Repair Clamps and Sleeves available in sizes 3/8" through 24" and larger.

DRESSER MANUFACTURING COMPANY
BRADFORD, PA.

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WHAT CAN WE MAKE FOR *You?*

We Have Complete Facilities for

- Fabricating Wire Parts and Products of All Kinds (Except Springs)
- Hot Dip Galvanizing, Tinning, Plating
- Welding Light Gauge Sheet Metal

• Union Steel Products has the experience and the facilities to help you speed up war production.

Whether your requirements call for standard wire parts of products—or special items made to your specifications—or engineering assistance in organizing more efficient handling of your production—write, wire or phone (Albion No. 147) for quotations or further information.

UNION STEEL PRODUCTS CO.
400 Pine St. • Albion, Mich.

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More Speed for every hand tool operation . . . Snap-ons deliver it . . . with less effort, greater accuracy and utmost safety! In hundreds of plants engaged in critical war production, Snap-ons are standard tool equipment . . . *the choice of better mechanics* throughout industry. 3,000 modern Snap-on tools provide a wide selection for production, assembly and maintenance operation. Snap-on offers direct-to-user tool service through 37 factory branches in key production centers. Write for catalog!

SNAP-ON TOOL CORPORATION, 8042-D 28th Ave., Kenosha, Wis.

▲ Mention Item NED-2332 when writing ▲

1 MAN DOES THE WORK OF 8

And besides doing a better job 8 to 10 times faster, cleaning machinery the Jenny Steam-Spray Way before repairs, saves 25% to 40% of mechanics' time usually lost wiping dirt and grease from tools and equipment. Hypressure Jenny cut one mill's window cleaning costs from $16 per 1000 sq. ft. to $2 per 1000 sq. ft. . . . is saving an industrial plant $4,500 every year on floor cleaning alone. The Jenny Steam-Spray Way is the fastest, most thorough and most economical cleaning method known. It dissolves, cuts and flushes grease, oil and dirt from surfaces almost instantly.

Write for free survey showing how Jenny can save you man-hours and money.

HYPRESSURE JENNY DIVISION OF
HOMESTEAD VALVE MFG. CO.
P. O. BOX 84 • • • CORAOPOLIS • • • PENNSYLVANIA

▲ Mention Item NED-2333 when writing ▲

G-E Laminated Plastics

For better nameplates

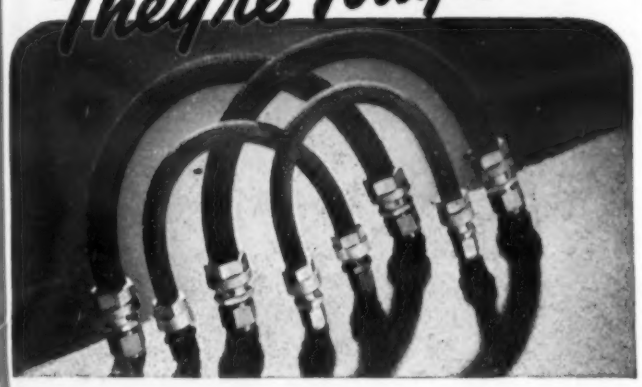
Laminated G-E Textolite is an ideal material for nameplates. Durable, weather- and chemical-resistant, non-corroding, and easily cleaned, it will not crack, dent, or mar to obscure legibility. Available in solid colors or with contrasting surface and core. Supplied in sheets or engraved to specifications. Write Section L-239 for information. One Plastics Avenue, Pittsfield, Mass.

PLASTICS DIVISIONS PD-239A

GENERAL ELECTRIC

▲ Mention Item NED-2334 when writing ▲

They're Tough—



—because they have tough jobs to do!

Weatherhead flexible hose and hose assemblies are available in various types for automotive and aviation installations as fuel, oil, hydraulic and vacuum lines. Designed to withstand excessive vibration and varying pressures, these hose assemblies are dependable in all weather conditions. They come equipped with quick attachable fittings, are entirely leakproof and easy to assemble. No special tools required. Write for complete information.

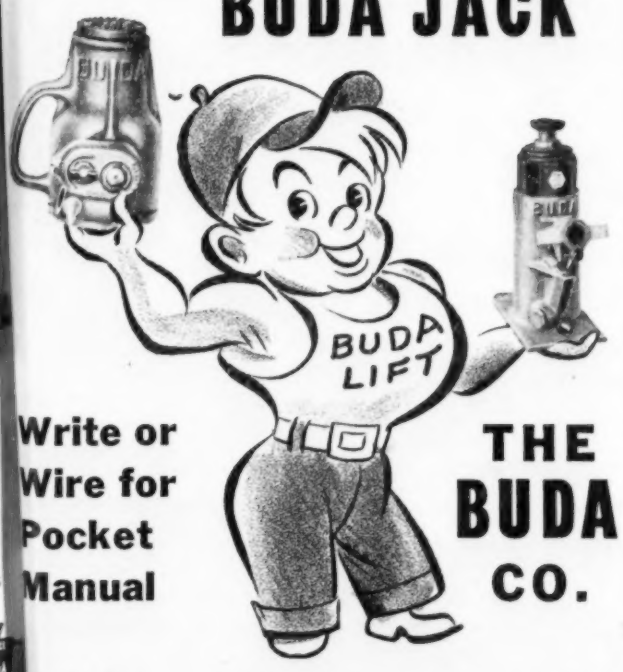
Manufacturers of vital parts for the automotive, aviation, refrigeration and other key industries

Weatherhead

THE WEATHERHEAD COMPANY, CLEVELAND 8, OHIO
Plants: Cleveland, Columbia City, Ind., Los Angeles, Canada—St. Thomas, Ontario

▲ Mention Item NED-2335 when writing ▲

I lift anything up to 200,000 lbs. I am the Lift in every BUDA JACK



Write or Wire for Pocket Manual

THE BUDA CO.

419 Commercial Avenue • Harvey, Illinois

▲ Mention Item NED-2336 when writing ▲

New Literature—Continued

PLASTICS—8-page illustrated booklet presents information on Lucite, Plastacele, Pyralin, Nylon and Butacite plastics—applications in industry, health, fashions, household service, sports and military equipment are shown—issued by E. I. du Pont de Nemours & Co., Plastics Dept., Arlington, N. J.

▲ Mention Item NED-2337 when writing ▲

MATERIALS HANDLING BUCKETS—16-page illustrated booklet is condensed summary of line of digging and re-handling orange peel and clam shell grab buckets—announces that company is prepared to make quick shipments by air as soon as cargo planes are available for carrying civilian freight—issued by The Hayward Co., 50 Church St., New York 7, N. Y.

▲ Mention Item NED-2338 when writing ▲

MILLING MACHINE CHUCK—4-page illustrated folder contains complete information, specifications and prices on two models of hydraulic multi-grip milling machine chuck—issued by Aerco Corp., Hollydale, Calif.

▲ Mention Item NED-2339 when writing ▲

SCALES, DIALS & INDICATORS—3-page illustrated folder explains company's process for making scales, dials, templates, indicators, diagrams and other precision reproduction work requiring silhouette of extreme contrast—issued by Maymer Corp., 10876 Berea Rd., Cleveland 2, O.

▲ Mention Item NED-2340 when writing ▲

ELECTRIC HAND TOOLS—16-page illustrated booklet, "Facts & Figures" covers line of high speed electric hand tools—applications and specifications are shown—issued by Precise Products Co., 1328-30 Clark St., Racine, Wis.

▲ Mention Item NED-2341 when writing ▲

DIAMOND TOOLS—Two illustrated booklets are numbers 3 and 4 of series of nine booklets on complete line of diamond tools—No. 3 describes drill bits and No. 4 describes radius forming diamond tools—issued by Wheel Trueing Tool Co., 3200 W. Davison, Detroit 6, Mich.

▲ Mention Item NED-2342 when writing ▲

GRINDERS & BUFFERS—20-page illustrated catalog covers line of grinders and buffers—machines have range of 1/3 to 10 horsepower in capacity—complete specifications, prices and operating details of various models are included—issued by Queen City Machine Tool Co., 233 E. Second St., Cincinnati 2, O.

▲ Mention Item NED-2343 when writing ▲

CUTTER & TOOL GRINDER—12-page illustrated booklet No. M-1296 tells interesting applications of Cincinnati No. 2 cutter and tool grinder—issued by Cincinnati Milling & Grinding Machines, Inc., Cincinnati 9, O.

▲ Mention Item NED-2344 when writing ▲

HOLE PUNCHING SYSTEM—20-page illustrated catalog No. "PS" is descriptive of plate set system for punching sheet metal—operation is explained and specifications and prices are listed—issued by Wales-Strippit Corp., 363 Payne Ave., North Tonawanda, N. Y.

▲ Mention Item NED-2345 when writing ▲

YOU TOO HAVE NEED FOR A

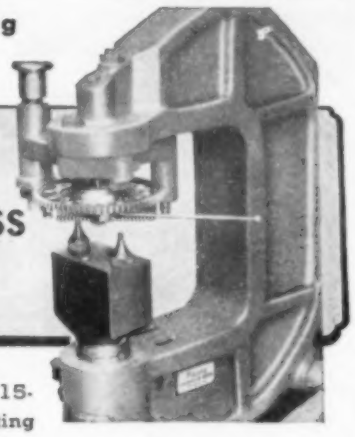
DuMONT Oscillograph

• Regardless what your job may be—production, maintenance, research, engineering, servicing—a DuMont Cathode-Ray Oscillograph will help you do it better, quicker, more economically, and most thoroughly. Standard types to meet most requirements. Special types developed and built to meet extraordinary needs. Write on your business stationery for literature.

DUMONT ALLEN B. DU MONT LABORATORIES, Inc.
Passaic • New Jersey
Cable Address: Wespexlin, New York

▲ Mention Item NED-2346 when writing ▲

For Better Riveting **FASTER...**



use a HANNA RIVETING PRESS Tailored to YOUR Job!

Here is a close-up of a 15-ton Hanna Rapid Riveting Press tooled for duplex riveting of a gear assembly—it's built to give top production on this specific operation. It is one example of the 500 styles and sizes Hanna has produced, both pneumatic and hydraulic, to handle rivets from 3/16" to 1-1/2" in diameter.

Whatever your riveting problem may be, take advantage of more than 40 years experience that Hanna has in the design and application of riveting presses. Send a description of your work with blue prints—or a sample if you can. Write for Catalog 232.

HANNA ENGINEERING WORKS
1765 ELSTON AVENUE • CHICAGO 22, ILLINOIS
RIVETERS • CYLINDERS • VALVES • AIR HOISTS

▲ Mention Item NED-2347 when writing ▲

ALL ROADS LEAD TO HARPER

When you need fastenings that (1) resist rust and corrosion . . . (2) are non-magnetic . . . (3) are practically non-sparking . . . (4) are usable again and again . . . your road leads to Harper's.

The Harper organization is known as "Headquarters for Non-Ferrous and Stainless Fastenings" because it specializes on these products . . . makes nothing of common steel. Harper stocks 4280 different items . . . operates hundreds of modern machines especially planned for the manufacture of fastenings . . maintains a large staff of field service engineers. New, colorful 1944 catalog and reference book will be ready soon.

BRASS
BRONZE
COPPER
EVERDUR
MONEL
STAINLESS

THE H. M. HARPER COMPANY
2628 Fletcher Street, Chicago 18, Ill.
BRANCH OFFICES:
New York City • Philadelphia • Los Angeles
Milwaukee • Cincinnati • Houston
Representatives in Principal Cities

HARPER EVERLASTING FASTENINGS

▲ Mention Item NED-2348 when writing ▲

SpeedWay

1/2" DRILL $32.50

With Jacobs Chuck

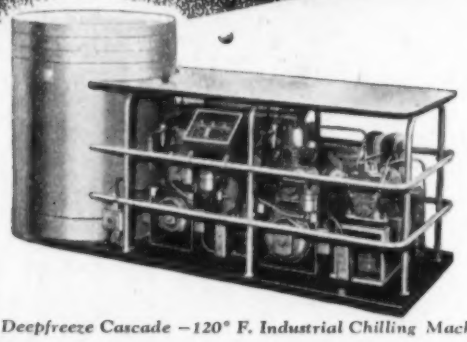
MORE DRILL for the Money

The last word in ½" capacity drills with every advanced feature. Powerful specially designed Universal Motor pours power thru triple reduction hardened steel gears. Forced air cooling prevents overheating. Housing is sturdy, light weight die casting. Self-aligning porous bronze bearings soak up oil like a sponge, release it slowly as bearing temperatures change. New type "in line" rear grip makes it natural to drill straight holes. One handle removable for close quarter drilling. Light weight (only 10¼ lbs.) means easy handling, yet it is so powerful that it will drill a ½" hole in iron with 300 lbs. weight on the bit. Jacobs key operated chuck. This is not a heavy duty production line tool, but it will give exceptional service to the garage man, maintenance man, contractor or installer.

SPEEDWAY MANUFACTURING COMPANY
1868 S. 52nd Avenue Cicero, Illinois

▲ Mention Item NED-2349 when writing ▲

A Factual Report on How Tool Users are Increasing Tool Life Through Cold Treating of Stock Tools . . . . .



(Above) Deepfreeze Cascade −120° F. Industrial Chilling Machine

● Hundreds of tool users are today obtaining remarkable increases in tool life by using Deepfreeze Sub-Zero Temperatures for treating finished "ready to use" stock tools from the tool crib in their own plant. Hundreds of manufacturers are now using the Deepfreeze Cascade Industrial Chilling Machine on a practical production basis for cold treating of tools now on hand, all new tools before use, and all tools after each resharpening to restore original hardness of the actual cutting edges that may be slightly softened during resharpening operations. Here are the results direct from the field of a few actual tests made by various manufacturers on many types of tools.

DRILLS
On 21/32" drills, tool life was increased from 70 holes to 700 holes per grind by cold treating at −120° F. in a Deepfreeze.

TAPS
Tap life is increased from 40 pieces to 710 pieces per grind by cold treating.

SAWS
On a sawing operation on 5¾" round Mehanite cast bars, a 100% increase in cutter life between sharpenings was obtained after cold treating for two hours at −120°F. in a Deepfreeze machine.

MILLING CUTTERS
On a gang milling operation on 4340 steel it was formerly necessary to resharpen cutters every 7 hours. Now after cold treating for 2 hours at −120° F. in a Deepfreeze, the average life of these cutters is 24 hours per grind.

FORM TOOLS
Tool life of a form cutter before cold treating was 150 pieces while after treating for 2 hours in a Deepfreeze the tool averaged 510 pieces per grind.

BROACHES
After cold treating high speed burnishing broaches at −120° F. for 3 hours, an increase of from 216 pieces to 648 pieces per grind was obtained.

MORE PROOF—For additional proof on how the Deepfreeze Industrial Chilling Machines can be profitably adapted in your plant for the cold treating of cutting tools and many other applications, send for free copy of the new Deepfreeze Metal Chilling Book.

Trade-mark DEEPFREEZE Registered United States Patent Office

Deepfreeze 2316 Davis Street, North Chicago, Illinois

Division of Motor Products Corp. Detroit, Michigan

▲ Mention Item NED-2350 when writing ▲

New Literature—Continued

VALVES—11½ x 17-inch chart is designed to help in selection of right valve for specific job—chart is convenient for shop training and for refresher on valves—issued by Reading-Pratt & Cady Div., American Chain & Cable Co., Dept. S.P., Bridgeport, Conn.

▲ Mention Item NED-2351 when writing ▲

FLOW MEASUREMENT AND CONTROL—Two illustrated catalog sections Nos. 92-B and 32-E are descriptive of Rota-Sight alarm and special service Rotameters for use in controlling and measuring liquid flow—issued by Fischer and Porter Co., 928 County Line Rd., Hatboro, Pa.

▲ Mention Item NED-2352 when writing ▲

TEMPERATURE & HUMIDITY CONTROL—8-page illustrated brochure is entitled "Problems & Solutions"—specific problems and solutions concerning temperature and humidity control in eight industries are presented—issued by Carrier Corp., 302 S. Geddes St., Syracuse, N. Y.

▲ Mention Item NED-2353 when writing ▲

HYDRAULIC FITTINGS—92-page illustrated bulletin presents complete information on hydraulic fittings and other screw machine products—issued by American Screw Products, 7000 Avalon Blvd., Los Angeles, Calif.

▲ Mention Item NED-2354 when writing ▲

PYROMETERS—38-page illustrated catalog No. 1101H contains information on Tag Celectray electric pyrometers including photoelectrically balanced recorders, indicators, controllers and recording controllers—issued by C. J. Tagliabue Mfg. Co., 550 Park Ave., Brooklyn 5, N. Y.

▲ Mention Item NED-2355 when writing ▲

CHAIN BELT MAINTENANCE—20-page illustrated bulletin No. 435 gives information on lubrication, repair and maintenance of chain belt drives during wartime—issued by The Chain Belt Co., 1686 West Bruce St., Milwaukee, Wis.

▲ Mention Item NED-2356 when writing ▲

CARBON SEAL RINGS—8-page illustrated booklet deals with carbon seal rings and their application to bellows type shaft seals—features of rings are given in detail with relation to specific uses—issued by Pure Carbon Co., Saint Marys, Pa.

▲ Mention Item NED-2357 when writing ▲

ELECTRICAL CONNECTORS—64-page illustrated technical bulletin No. 6050 presents information on indent type Hydent electrical connectors for use in marine, aircraft, electronic and electrical manufacturing industries in wide variety of applications—issued by Burndy Engineering Co., 107 Eastern Blvd., New York 54, N. Y.

▲ Mention Item NED-2358 when writing ▲

MILLING & GRINDING MACHINES—52-page illustrated booklet No. M-995-2 is third yearly general catalog covering line of machines for milling, broaching, grinding, lapping and cutter sharpening operations—issued by The Cincinnati Milling and Grinding Machines, Inc., Cincinnati 9, O.

▲ Mention Item NED-2359 when writing ▲

STOP COSTLY PLUMBING LEAKS

conserve irreplaceable fixtures save water, fuel and manpower

the proven "SEXAUER" way!

Don't discard old worn faucets—Re-form their rough, scored seats to a smooth, round "saddle" surface with the "Sexauer" Patented Precision Tool. It restores them better than new, to long, trouble-free service. Used and praised daily by thousands of Maintenance Engineers and Master Plumbers.

"Easy-Tite" (Pat'd) Washers—Fabric-reinforced like a tire, they outlast half-a-dozen ordinary types, withstand hot water, won't split or mush out of shape. "Easy-Tites" stay put—prevent drips, save water and fuel.

Over 1,000 Modern Maintenance Items and Suggestions are contained in the big, 64-page "Sexauer" Catalog. Send for your FREE copy TODAY. Included are highly specialized "Sexauer" parts and equipment for plumbing and heating maintenance, used by leading Maintenance Engineers and Master Plumbers.

Send for a nearby "Sexauer" Technician... he'll survey your needs and suggest a properly balanced stock of "Sexauer" Precision Tools and Triple-Wear Replacement Parts to suit your specific needs, whatever the age or style of your fixtures. Write to J. A. Sexauer Mfg. Co., Dept. N4, 2503-5 Third Ave., New York 51, N.Y.

Sexauer materials are advertised regularly in the Saturday Evening Post.

SEXAUER PRODUCTS
"SPECIALISTS IN PLUMBING AND HEATING MAINTENANCE MATERIALS FOR 23 YEARS."

▲ Mention Item NED-2360 when writing ▲

PN

SOCKETYPE CABLE TERMINALS

Exclusive Features

★ No Engineering Change Necessary
★ Saves 90% on Critical Material
★ Speeds Cable Assembly
★ Simplified Swaging
★ Interchangeability
★ Low Cost

Pat. Applied For

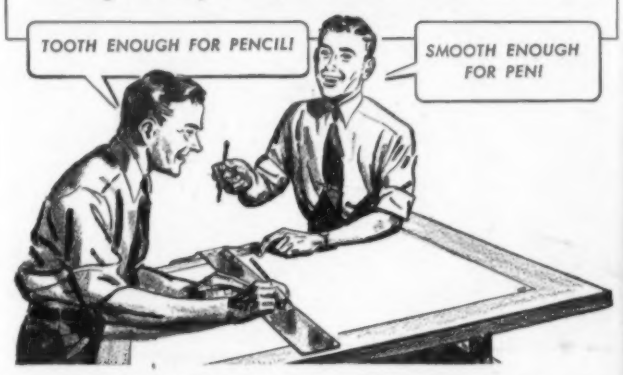
9 Sizes in Both Fork and Eye Types
1/16" • 3/32" • 1/8" • 5/32"
3/16" • 7/32" • 1/4" • 9/32"
and 5/16" Cable Sizes
Other Sizes Made to Order

Approved as interchangeable with B and C types of present standard AN 667 & 668.

POULSEN & NARDON, INC.
Terminal Box 3298
LOS ANGELES 54, CALIFORNIA

▲ Mention Item NED-2361 when writing ▲

Any Way You Look at it . . .



. . . Arkwright Tracing Cloths are Tops!

Take Arkwright MATSURF Pencil Tracing Cloth for example. One draftsman will tell you he likes it because it will take pen or pencil lines with equal facility . . . because it erases so neatly. Another will say—because it makes such sharp, legible reproductions . . . stands up under rough handling. Try MATSURF yourself. You'll see that it is superior on all counts. Arkwright Finishing Company, Providence, Rhode Island.

Arkwright TRACING CLOTHS

AMERICA'S STANDARD FOR OVER 20 YEARS

▲ Mention Item NED-2362 when writing ▲

40 years of valuable experience can mean a lot when it comes to the Control of Industrial Dust.

The giant "CH" Collector above and the "CK" Unit Collector in the insert show the wide range of Pangborn Dust Control applications. Both are the fruit of our 40 years of valuable experience.

Bring *your* dust problem to Pangborn, today!

PANGBORN
WORLD'S LARGEST MANUFACTURER OF DUST COLLECTING AND BLAST CLEANING EQUIPMENT
PANGBORN CORPORATION . . . HAGERSTOWN, MARYLAND

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PN

SOCKETNUT ROD END TERMINALS

Exclusive Features

★ Made of Non-Critical Material
★ No Tightening Distortion
★ Reduced Service Stocks
★ Interchangeability
★ Prompt Deliveries
★ High Strength

Rods furnished on special order to customer's specifications

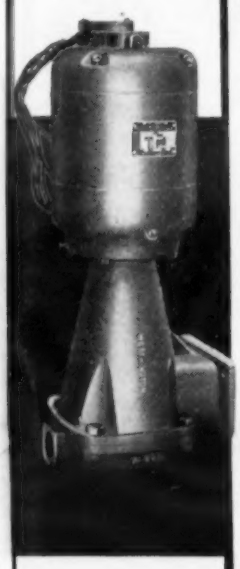
Pat. Applied For

7 Sizes in Both Fork and Eye Types
4-40 • 10-32 • 1/4-28
8-32 • 12-24 • 5/16-24
3/8-24
Other Thread Sizes Made to Order

POULSEN & NARDON, INC.
Terminal Box 2398
LOS ANGELES 54, CALIFORNIA

New Specification Sheet and Folder Available to Industry Personnel

▲ Mention Item NED-2364 when writing ▲



NEW MONOBLOC
Coolant and Circulating Pumps . . . *for longer service*

All seven new Worthington Monobloc Coolant and Circulating Pumps have these three life-stretching features in common:

1. EXTRA BEARING PROTECTION: Worthington adds an extra grease seal to keep moisture and vapor away from bearings and motor.
2. TOTALLY ENCLOSED MOTOR: Completely protected against splash and drips.
3. EXTRA LARGE SHAFT: Keeps working parts in alignment . . . assures smooth operation, longer life.

PLUS construction and assembly features resulting from 104 years of pump-making experience and leadership . . . to give you the best leak-proof, trouble-free pumps on the market today. Write for Bulletin W-321-B16.

WORTHINGTON BEHIND THE NAME

WORTHINGTON PUMP AND MACHINERY CORPORATION
Standard Products Division, Harrison, N. J.

▲ Mention Item NED-2365 when writing ▲

INDUSTRIAL GLOVES

knit wrist women's gauntlet gauntlet styles

SYNTHETIC COATED FABRIC LINED

Acid, Caustic, and Oil Proof, for MEN and WOMEN.

Edmont
TRADE MARK REG. U.S. PAT. OFF.
503 ORANGE STREET COSHOCTON, OHIO

▲ Mention Item NED-2366 when writing ▲

New Literature—Continued

WELD INSPECTION—23 x 35 inch "Weld Inspection Chart" graphically illustrates results obtained in making fillet and butt welds—it briefly describes appearance and characteristics of proper and improper weld beads and includes descriptions of condition under which each weld was made—Fleet-Fillet welding technique is also discussed—issued by Lincoln Electric Co., Dept. AP-574, 12818 Coit Rd., Cleveland, O.

▲ Mention Item NED-2367 when writing ▲

MAGNETIC CHUCK & CONTROL—4-page illustrated bulletin describes Selectron which provides direct current for chucks, demagnetizes chucks and varies magnetic pull of chucks; and Doall electro-magnetic chuck—issued by Continental Machines Inc., 1314 Washington Ave. S., Minneapolis 4, Minn.

▲ Mention Item NED-2368 when writing ▲

SASH & FRAME CLAMP—4-page illustrated bulletin No. 11-M is descriptive of series No. 200 high speed pneumatic sash and frame clamp—employs overlapping jaw principle which adjusts to any square or rectangle within range of machine and applies uniform pressure along full length of all sides of work—issued by The Black Bros. Co., 415 S. Ninth Ave., Mendota, Ill.

▲ Mention Item NED-2369 when writing ▲

STEEL PRICE LIST—Simplified price list contains all data required to determine or check prices of steel purchased from warehouse stocks—issued by Earle M. Jorgensen Co., 10510 South Alameda St., Los Angeles 54, Calif.

▲ Mention Item NED-2370 when writing ▲

FEED WATER CONTROL—28-page illustrated booklet, "Mechanical Feed Water Regulation for Boilers," covers principles of boiler feed water control and describes mechanical equipment available to meet various operating conditions—differential pressure control and feed pump control are also discussed—issued by Northern Equipment Co., Erie, Pa.

▲ Mention Item NED-2371 when writing ▲

NEUTRAL BATHS—27-page illustrated bulletin No. 110 presents information on neutral baths for hardening and tempering—various types of baths and treatments are outlined—issued by The A. F. Holden Co., 200 Winchester Ave., New Haven 8, Conn.

▲ Mention Item NED-2372 when writing ▲

REMOTE CONTROL VALVE—20-page illustrated bulletin No. 800 describes model 80 Flex-Flo remote control valve for cold fluid service including highly corrosive and erosive liquids and gases—diagrams show construction and operation—issued by Grove Regulator Co., 6533 Green St., Emeryville, Calif.

▲ Mention Item NED-2373 when writing ▲

CHAIN DRIVES—20-page booklet No. 1991 contains series of tables designed to shorten time required for calculating center distances and chain lengths of chain drives operating over cut tooth wheels—issued by Link-Belt Co., Dept NED, 807 N. Michigan Ave., Chicago 1, Ill.

▲ Mention Item NED-2374 when writing ▲

Why we don't lay our cards on the table

There are thousands of styles and sizes . . . for all makes and models of time recorders—for all cost and payroll systems . . . to serve both regular and special needs.

We do a big card business. That's why prices are reasonable. We have produced cards for more than half a century. That's why we have developed some exclusive card tricks.*

There's one trick we haven't fully learned: How to get you to submit samples of the cards you use so that we may submit quotations and suggestions. Maybe folder 4-D will help. Write Simplex Time Recorder Co., Gardner, Mass. Branches in principal cities.

SIMPLEX SAVES MANPOWER
Time Honored for Over Fifty Years

←*This time card notch saves manpower

▲ Mention Item NED-2375 when writing ▲

METAL NAME PLATES IN COBALLOY

This Material Available in Large Quantities for War Work

★

COLONIAL BRASS CO.
101 VINE STREET
MIDDLEBORO, MASS.

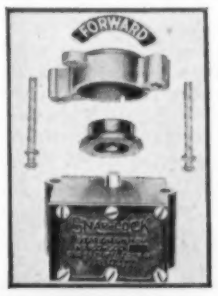
▲ Mention Item NED-2376 when writing ▲

HOW TO *START CONTROL STOP* HEAVY DUTY MACHINES

Here is a switch—for heavy duty service—that is as near failure-proof and wear-out-proof as modern skill can produce. The experience of 80% of all the machine tool builders proves it, in daily service.

SNAP-LOCK TRADE MARK

STATION CONTROL SWITCH

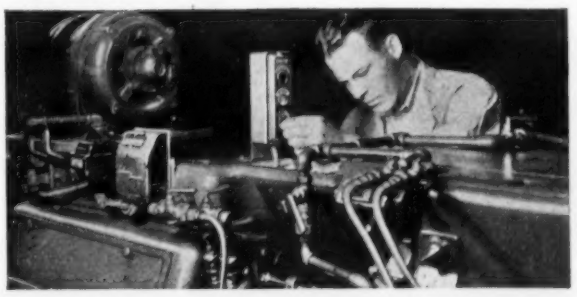


1. ONE BASIC UNIT

The basic Snap-Lock Switch unit is simple in design, built for extra heavy duty and long life. Locks positively in either on or off position. Wiring always accessible. Quick, clean make or break.

2. ANY COMBINATION

Any number of Snap-Lock Standard Units may be combined to suit a wide range of switch applications. Flush or surface mounting, for both original installation and replacement—your own designs, or our Engineering Department will help you.



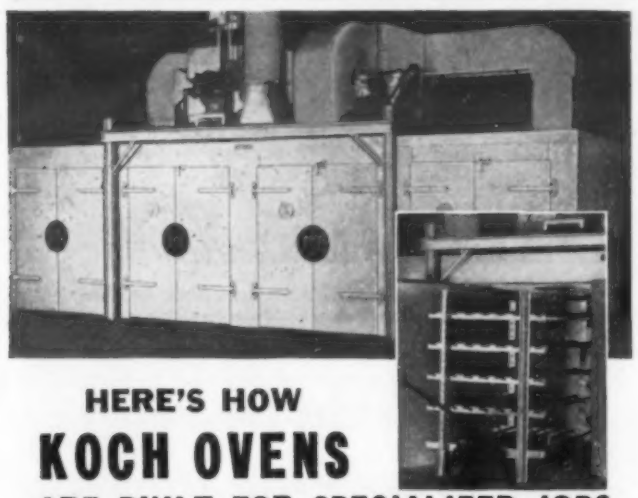
3. FOR ANY MACHINE

There are thousands of users of Snap-Lock Switches, for all types of heavy duty machines. The Snap-Lock principle has been proved, time and time again—in service where dependable operation is the first consideration. For complete details and specifications, ask for Bulletin EM-43.

ELECTRICAL MANUFACTURING DEPARTMENT

THE NATIONAL ACME CO.
CLEVELAND, OHIO

▲ Mention Item NED-2377 when writing ▲



HERE'S HOW

KOCH OVENS

ARE BUILT FOR SPECIALIZED JOBS AND DELIVERED IN RECORD TIME!

This huge Truck-Type Core Baking Oven was built to the exact specifications of a large mid-western foundry. By using over 95% standardized parts KOCH delivered and installed the oven in amazingly fast time. This is just another example of how KOCH can furnish the core oven you want . . . any size, any heating capacity . . . when you need it.

If You Need An Oven . . . In A Hurry

PHONE, WIRE OR WRITE TODAY!

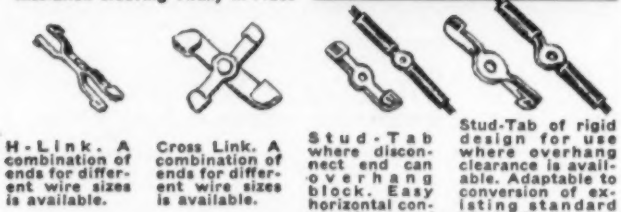
GEORGE KOCH SONS, INC. MAKERS OF *Industrial Equipment*

2124 Penna. St., Evansville 4, Indiana

▲ Mention Item NED-2378 when writing ▲

THE AMP KNIFE-DISCONNECT SPLICING SYSTEM

FOR WIRE SIZES 26 TO 10



H-Link. A combination of ends for different wire sizes is available.

Cross Link. A combination of ends for different wire sizes is available.

Stud-Tab where disconnect end can overhang block. Easy horizontal connection and disconnection.

Stud-Tab of rigid design for use where overhang clearance is available. Adaptable to conversion of existing standard blocks to connection blocks.

The basic design of the AMP Splicing Terminal, using identical ends with a knife-switch wiping action, has proven so superior to conventional splicing methods that AMP now introduces a disconnect splicing system to cover a wide variety of adaptations. Typical examples are shown here. Each of these incorporates the same exceptional electrical and mechanical characteristics inherent in the basic design. All current carrying parts are integral stampings of pure electrical copper, having minimum weight. No reduced conductivity alloys.

Write today for your copy of AMP Bulletin 31.

AIRCRAFT-MARINE PRODUCTS INC.
1521-47 NORTH FOURTH STREET, HARRISBURG, PA.
A & M ACCESSORIES, TORONTO, ONTARIO

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The Answers to your WARTIME STORAGE PROBLEMS

• Steadily increasing sales and repeat orders prove the sound design and construction of Lyon Storage Units . . . ENGINEERED IN WOOD FOR THE DURATION.

These wartime "lifesavers" include (1) Open and closed types of shelving that is completely adjustable without the use of any tools on 3" centers vertically and horizontally, (2) Shoprobes and Lockers to meet all types of clothing storage needs, (3) Cabinets for supplies, wardrobes and cabinet-wardrobe combinations.

All reasonably priced . . . All available for quick delivery.

LYON METAL PRODUCTS, INCORPORATED
General Offices: 422 Madison Avenue, Aurora, Ill.
Branches and Distributors in All Principal Cities

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New Literature—Continued

ABRASIVE MILLING—Illustrated catalog is concerned with abrasive milling—each page is complete unit giving necessary data and specifications of No. 302 horizontal wet abrasive cutting machine—issued by Andrew C. Campbell Div., American Chain & Cable Co., Bridgeport 2, Conn.

▲ Mention Item NED-2381 when writing ▲

POSTWAR INDUSTRIAL FACILITIES—8-page illustrated booklet, "A Post-War Proposal," outlines company's facilities, experience and background and extends invitation to aggressive individual or organization to open negotiations on postwar proposition—issued by R. Voigt & Son Co., 1060 Military Rd., Buffalo, N. Y.

▲ Mention Item NED-2382 when writing ▲

QUENCHING OIL COOLERS — 4-page illustrated folder describes quenching oil coolers which offer safe, practical method of cooling oil used in quenching steel or other metals to be heat treated—straight tube and U-tube types are shown—issued by The Sims Co., P.O. Box 1096, Erie, Pa.

▲ Mention Item NED-2383 when writing ▲

STEEL MILLING CARBIDES—14-page illustrated technical bulletin No. GT-174 contains detailed information on high speed milling of steel with cemented carbide tipped cutters —issued by Carboloy Co., 11163 E. Eight Mile Rd., Detroit 32, Mich.

▲ Mention Item NED-2384 when writing ▲

METAL CUTTING—4-page illustrated folder contains complete specific information on advantages, uses, types and speeds of cool, fast cutting Radiac abrasive cut-off machines and abrasive cut-off discs—issued by A. P. de Sanno & Son, Inc., Machine Sales Div., 106 S. Sixteenth St., Philadelphia, Pa.

▲ Mention Item NED-2385 when writing ▲

FASTENING DEVICES—Illustrated catalog No. F. covers cap screws, set screws, aircraft bolts, nuts and other fastener items—includes complete dimensions and weights—issued by The Cleveland Cap Screw Co., 2917 E. Seventy-ninth St., Cleveland 4, O.

▲ Mention Item NED-2386 when writing ▲

PILOT PLANTS—22-page illustrated catalog No. 1957 is concerned with pilot plants for chemical process development —outlines sequence of steps in chemical plant evolution— engineering services and experience of company are shown —issued by Blaw-Knox Co., Farmers Bank Building, Pittsburgh 30, Pa.

▲ Mention Item NED-2387 when writing ▲

POWER TRUCKS—18-page illustrated catalog No. 52 is handbook of information on material handling with power trucks, designed to facilitate selection of proper equipment for any set of requirements—in addition to listing all standard electric trucks, it shows many special models for unusual operations—issued by The Baker Industrial Truck Div., The Baker-Raulang Co., 2179 W. Twenty-fifth St., Cleveland 13, Ohio.

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Faster Heat Watlow Electric Strip Units

They heat better because they fit better . . . and cut down burnouts, too. Watlow Electric Heating Unit construction is based on over 20 years specializing in the application of electric heat.

Strip and immersion heaters of numerous sizes and capacities for "every day" and unusual heating jobs. Cartridge units in diameters from 1/8" to 1 1/4" in various lengths and capacities.

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1314 North 23rd Street • Saint Louis 6, Missouri

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WATLOW

SPECIALISTS IN ELECTRIC HEATING UNITS

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-and it costs you less!

Diamond Millers have an enviable reputation for "getting things done" right! Built to the highest government standards, these Millers have made a name for themselves in many of the nation's largest plants. It will pay you to learn the full details—four models from which to choose—both the price and delivery date will probably surprise you!

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Whenever tubes and pipe are to be joined, there is need for an AIRETOOL TUBE EXPANDER. They are precision made, long lasting and versatile. Made to meet every tube expansion need—to fit every type and size of tube.

Remove foreign deposits from tubes quickly and efficiently with Airetool Tube Cleaners. Write for details

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SPRINGFIELD, OHIO

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You can accurately measure applied torque in *inch ounces, inch pounds* or foot pounds, with STURTEVANT Torque Wrenches as they are built in all capacities from 0-40 inch ounces up to 600 foot pounds or 7200 inch pounds. Over 100 models and types.

Each is a permanently accurate tool.

Write for Bulletin TW-22

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The first consideration when buying safety Equipment is . . . SAFETY! Is it correctly made? Is it reliable? Will it protect the worker?

Remember this fact: ANY safety equipment you buy from Pulmosan is thoroughly proven and dependable for its purpose. All materials of construction—all finished products—are submitted to careful laboratory and on-the-job tests to meet established safety standards.

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Chemical Handling	Hoods
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First Aid	Protective Clothing
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Pulmosan Safety Equip. Corp., Dept. NED, 176 Johnson St., Brooklyn 1, N. Y.

Pulmosan EVERYTHING FOR INDUSTRIAL SAFETY — PULMOSAN STOPS Accidents

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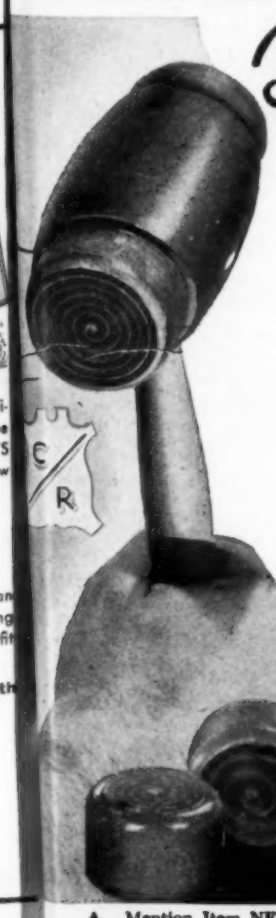

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PROTECTS

The tough, resilient, coiled rawhide faces of C/R Hammers and Mallets strike effective blows without battering or marring . . . protects finished surfaces, machines delicate insulation and parts. Speed die-setting, assembly, no fatiguing recoil. Reduce breakage and spoilage. Sizes and weights for every need.

C/R Hammers have permanent malleable iron heads which take replaceable insert faces of coiled

CHICAGO Rawhide MFG. CO. 1287 ELSTON AVE. ★ CHICAGO, ILLINOIS

▲ Mention Item NED-2395 when writing ▲

New Literature—Continued

UNIT HEATERS—Three illustrated bulletins Nos. 46S-6, 46E-22 and 46PQR-17 present information on various models of unit heaters and heat diffusers—issued by Carrier Corp., 302 S. Geddes St., Syracuse 1, N. Y.

▲ Mention Item NED-2396 when writing ▲

VALVES—11½ x 17 inch valve selection chart explains conditions to consider when selecting valve and breaks down these conditions to determine how these conditions affect operation of valve—issued by Reading-Pratt & Cady Div., American Chain & Cable Co., Bridgeport 2, Conn.

▲ Mention Item NED-2397 when writing ▲

SOLDERLESS WIRING DEVICES—72-page illustrated catalog No. SD-1 covers AMP solderless wiring devices—includes such items as connectors, cable lugs, grid clips and lighting contacts—copies available upon request on company letterhead—issued by Aircraft-Marine Products, Inc., 1591K N. Fourth St., Harrisburg, Pa.

▲ Mention Item NED-2398 when writing ▲

RADIO & ELECTRONIC EQUIPMENT—4-page illustrated monthly bulletin, "Allied Radio and Electronic News" is published as service to engineers, technicians and users of radio and electronic equipment—to be placed on mailing list, address requests on company letterhead—issued by Allied Radio Corp., Dept. N-D, 833 W. Jackson Blvd., Chicago 7, Ill.

▲ Mention Item NED-2399 when writing ▲

ELECTRICAL EQUIPMENT CARE — 28-page illustrated booklet, "Care and Maintenance of Electrical Equipment" contains simple instructions for keeping switches, panelboards and switchboards in good operating condition—also includes parts ordering list—issued by Square D Co., 6060 Rivard St., Detroit 11, Mich.

▲ Mention Item NED-2400 when writing ▲

GEAR LUBRICATION—Illustrated booklet describes various types of gears and tells proper types of lubricants for gear sets, headstocks, open gears and worm gears—general instructions on proper lubrication maintenance are included—issued by E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia, Pa.

▲ Mention Item NED-2401 when writing ▲

FRICTION, GALLING & SEIZING—8-page illustrated bulletin No. 17 contains information developed as result of recent researches into problems of galling, seizing and scuffing of metal surfaces in contact with one another—description of test methods is included and test results are charted and conclusions tabulated—issued by Meehanite Research Institute of America, Inc., Pershing Square Bldg., New Rochelle, N. Y.

▲ Mention Item NED-2402 when writing ▲

SPEED REDUCERS—24-page illustrated booklet relates important part that speed reducers have been playing in many phases of war production effort—emphasizes many applications of these units—issued by Winfield H. Smith, Inc., 22 Eden St., Springville, Erie County, N. Y.

▲ Mention Item NED-2403 when writing ▲

The Valve with MERCHROME-COATING

HARD FACED

Handling Phenol in concentrations up to 98% at 600°F.

The above photo shows a Nordstrom Valve (disassembled for inspection) which was installed in 1939 in a phenol plant of a large oil company, handling phenol in concentrations up to 98% at 600°F. at 150 lbs. pressure. That's a tough service. The average life for a carbon steel valve in this service is six months. This valve is still in service. It's a Nordstrom Hypresseal Valve, made of Stainless Steel and Merchrome Coated. Both the plug surface and interior of the valve are hard-faced with Merchrome Coating, to give many times the life of an ordinary valve. Ask for Literature.

MERCO NORDSTROM VALVE CO.

A Subsidiary of Pittsburgh Equitable Meter Co.

400 LEXINGTON AVENUE, PITTSBURGH 8, PENNA.

NORDSTROM VALVES

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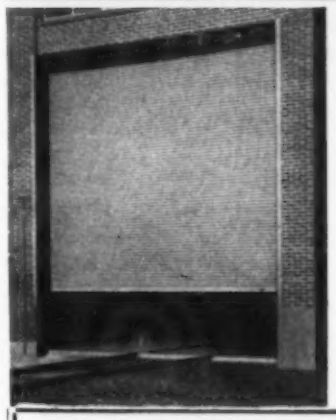

The smooth *coiling upward action* of Kinnear Rolling Doors — the way they open overhead out of the way, safe from damage, and permit full use of all surrounding floor and wall space — means greater doorway efficiency. And these operating advantages are *built to last* in Kinnear's rugged interlocking steel-slat design (also inter-lapping wood-slat construction). Equipped with motor operation and remote control (both optional) they offer *maximum* savings in time and labor! Write for details.

The KINNEAR MFG. Co.
3017 FIELDS AVE., COLUMBUS 16, OHIO

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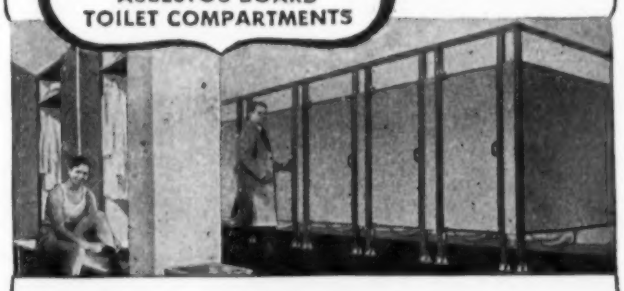
Avoid Resentment Caused by Neglected Toilets

"Some good old-fashioned HOUSECLEANING will help, but that isn't enough—we need more privacy. Yes, I mean in the toilets and washrooms, and I've quit whispering."

HOUSECLEAN NOW!

Men as well as women resent obnoxious toilet and washroom environment. Old, dirty toilet compartments and fixtures, unpainted or dirty walls and floors, poor ventilation and dingy corners lead to irritation and resentment, and imperil the physical fitness of workers. Such conditions retard production, result in high labor turnover. Begin housecleaning today . . . and where replacements or additions are needed, it's easy and economical with Sanymetal Asbestos Board Toilet Compartments. They give a lift to factory toilet rooms, provide deserved privacy, encourage orderliness and cleanliness and promote good feeling.

Sanymetal* ASBESTOS BOARD TOILET COMPARTMENTS



Save Time and Money by Installing Sanymetal Toilet Compartments: Sanymetal offers three types of wartime toilet compartments; types for both temporary and permanent installations. Sanymetal Toilet Compartments are economically designed and built by specialists with over 29 years of experience, and embody convenience and sanitation in a degree unappreciated and unapproached, and usually overlooked by those lacking Sanymetal's long experience in this line. ***Doors and partition panels of Sanymetal Toilet Compartments*** are manufactured of asbestos-board 1¼ inches thick, consisting of two sheets of compressed cement asbestos-board, laminated to two sides of a rigid, structural core of insulation board, resulting in a strong, rigid panel that is moisture, fire and wear resistant. ***Sanymetal Toilet Compartments provide a durable and rigid installation,*** free from dirt-collecting pockets and ledges, easy to keep clean. ***One order, one priority covers everything*** you need for complete installation of Sanymetal Toilet Compartments, even complete door hardware and partition fittings. ***Houseclean your toilet facilities now*** and safeguard the health of your workers. Use coupon for Bulletin No. 940—gives complete information on Sanymetal Asbestos-Board Toilet Compartments. For quick action, see "Partitions" in your phone book for local Sanymetal Representative. A special toilet room housecleaning check list is available on request.

THE SANYMETAL PRODUCTS CO., INC.
1719 URBANA ROAD • CLEVELAND, OHIO

* TRADE MARK REG. U. S. PAT. OFF.

Sanymetal* TOILET COMPARTMENTS

The SANYMETAL PRODUCTS CO., Inc., 1719 Urbana Rd., Cleveland, O.
Please send immediately your Bulletin No. 940 on Sanymetal Asbestos-Board Toilet Compartments and Housecleaning Check List.

Name_____ Position_____
Firm_____
Address_____
City_____ State_____

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Pressed from Powdered Metals
in One to Two Seconds

Stokes Presses for Powder Metallurgy (manufacture by compressing powdered metals) speed war production, save strategic materials, form parts in a single, automatic operation. Rates up to several hundred per minute are often possible. Parts are accurate, of uniform density, completely formed and ready for sintering.

These presses are producing iron gears, half and flanged bushings, radio cores, ordnance components, hard-carbide tool bits . . . hundreds of different metal parts.

Similar presses are available for making ceramics parts, electrical insulators, fish-spine beads, radio and communications systems parts, etc. . . . also for compressing explosives, chemicals, pharmaceuticals, foods and many other products.

We have specialized in this type of equipment for more than 45 years. Write for complete 48-page catalog.

F. J. STOKES MACHINE COMPANY
5964 Tabor Road Olney, P. O. Philadelphia 20, Pa.
Representatives in New York, Chicago, Cincinnati, St. Louis, Cleveland, Detroit
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F.J.Stokes FJS Est 1895

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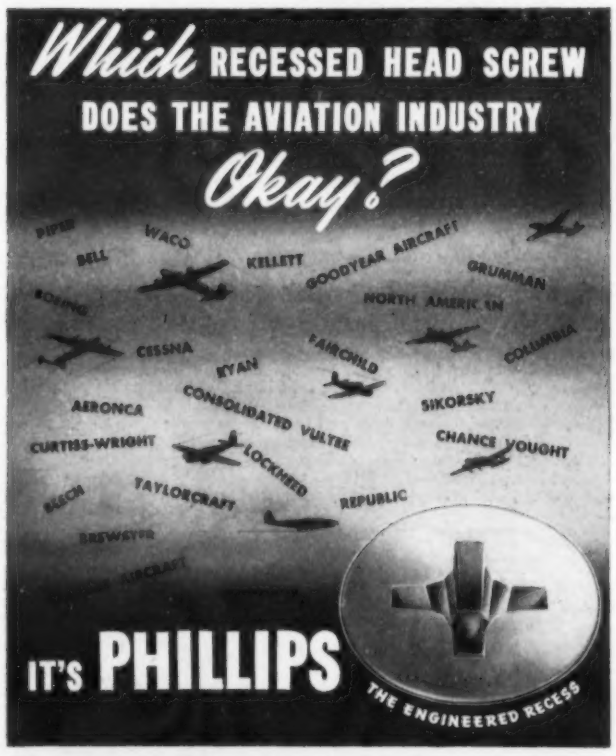
Which RECESSED HEAD SCREW DOES THE AVIATION INDUSTRY Okay?



IT'S GOT TO BE RIGHT! The aviation industry knows its engineering . . . knows the answers to production efficiency. That's why most of the leaders in this industry selected the PHILLIPS Recessed Head.

You'll choose the Phillips Recess, too, once you study its exclusive design. You'll appreciate the scientific engineering that makes it so successful. You'll discover that every angle, every dimension has a purpose – is important to screw driving efficiency and screw strength. You'll agree there's nothing like it!

To end screw driving troubles that slow down production and shove up assembly costs, specify screws with Phillips Recessed Head. You can get them in any head style, type, size.

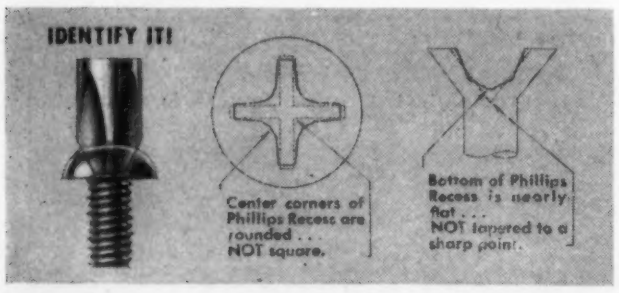
TO MAKE WARTIME QUOTAS AND PEACETIME PROFITS

FASTER STARTING: Driver point automatically centers in the Phillips Recess . . . fits snugly. Fumbling, wobbly starts, slant driving are eliminated. Work is made trouble-proof for green hands.

FASTER DRIVING: Spiral and power driving are made practical. Driver won't slip from recess to spoil material or injure worker. (Average time saving is 50%.)

EASIER DRIVING: Turning power is fully utilized. Workers maintain speed without tiring.

BETTER FASTENING: Screws are set-up uniformly tight, without burring or breaking of screw heads. The job is stronger, and the ornamental recess adds to appearance.



PHILLIPS *Recessed Head* SCREWS

Wood Screws • Machine Screws • Self-tapping Screws • Stove Bolts

23 SOURCES . . . American Screw Co. • The Bristol Co. • Central Screw Co. • Chandler Products Corp. • Continental Screw Co. • The Corbin Screw Corp. • General Screw Mfg. Co. • The H. M. Harper Co. • International Screw Co. • The Lamson & Sessions Co. • Milford Rivet and Machine Co. • The National Screw & Mfg. Co. • New England Screw Co. • The Charles Parker Co. • Parker-Kalon Corp. • Pawtucket Screw Co. • Pheoll Mfg. Co. • Reading Screw Co. • Russell, Burdsall & Ward Bolt & Nut Co. • Scoville Mfg. Co. • Shakeproof Inc. • The Southington Hardware Mfg. Co. • Whitney Screw Corp.

▲ Mention Item NED-2408 when writing ▲

New Literature—Continued

HAND TRUCKS & TRAILERS—6-page illustrated catalog section contains description of automatic dump hopper mounted on casters, four models of wagon type trucks, sixteen miscellaneous models of steel boxes, baskets and platform skids, trucks, trailers and four models of specific purpose trucks—issued by H. L. Pitcher Co., 12400 Strathmoor, Detroit, Mich.

▲ Mention Item NED-2409 when writing ▲

CHEMICAL PRODUCTS—144-page catalog, "Chemicals by Glyco" contains many additions over past editions, including several plasticizers for synthetic rubber and synthetic resins as well as information on esters manufactured by company—issued by Glyco Products Co., 26 Court St., Brooklyn 2, N. Y.

▲ Mention Item NED-2410 when writing ▲

HEAT TREATING EQUIPMENT—36-page illustrated catalog No. T-621 explains Vapocarb-Hump triple control method for heat treatment of steel—typical applications are described and shown—issued by Leeds & Northrup Co., 4934 Stenton Ave., Philadelphia 44, Pa.

▲ Mention Item NED-2411 when writing ▲

INDUSTRIAL EQUIPMENT—44-page illustrated catalog presents every machine and tool manufactured by company—includes both nonferrous metal and woodworking machines, tools and cutters—issued by Onsrud Machine Works, Inc., 3956 Palmer St., Chicago 47, Ill.

▲ Mention Item NED-2412 when writing ▲

FIRE CLAY BRICKS—4-page illustrated bulletin introduces three fire clay brick products known as Hyex, Super-Hyex and Superam—these bricks possess great spalling resistance, load bearing strength and stability—issued by McLeod & Henry Co., Troy, N. Y.

▲ Mention Item NED-2413 when writing ▲

FRACTIONAL HORSEPOWER DRIVES—44-page illustrated bulletin No. B6249 describes complete line of fractional horsepower Texrope V-belts and sheaves—contains installation photographs, line drawings and selection tables—issued by Allis-Chalmers Mfg. Co., 6900 Norman St., Milwaukee 1, Wis.

▲ Mention Item NED-2414 when writing ▲

MACHINE TOOLS—8-page illustrated booklet, Form 5350, presents operating information on Stellite 98M2 cobalt-chromium-tungsten turning and boring tools and milling cutters—explains cutting angles, speeds and feeds, chip-breaker grinds and grinding wheels that are recommended for use with these tools—issued by Haynes Stellite Co., Kokomo, Ind.

▲ Mention Item NED-2415 when writing ▲

PREFABRICATED PORTABLE HOUSES — 16-page illustrated booklet is entitled, "A New Era in Housing"—describes and discusses advantages of prefabricated, portable home which is entirely built and assembled within factory, ready to transport all in one unit, complete with installation of electric wiring and fixtures, plumbing and heating and cooking equipment—issued by Palace Corp., Flint, Mich.

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Careyclad BLACK METAL COATING

CAREYCLAD protects metal against rust and weather—is extremely durable, abrasion resistant, and resistant to acid, alkaline and salt atmospheric conditions. It is a practical, low-cost coating for metal buildings, iron sheets, structural steel, bridges, heavy machinery, and numerous sheet metal products. CAREYCLAD also renews dried-out felt in composition roofs. It forms a continuous one-piece coating on entire roof surface . . . is not subject to hair cracking, alligatoring, pinhole formation, slipping or sliding.

CAREYCLAD may be applied by spray painting or brushing, at every-day indoor or outdoor temperatures. Promptly available through CAREY Branches and Distributors everywhere. Write Dept. 79 for details.

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Dependable Products Since 1873
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One Piece Dimpler

The tool is always right—it's made right. Single piece male punch requires no adjusting. Curved mating surfaces assure a flat support for skins. Each tool is individually designed to do away with cracks. Tool is so designed to coin metal into dimples that nest above or below other sheets of any thickness. If you dimple S.T. or S.O. materials, the new "Topflight Dimpling Set" is the tool you are looking for. Specializing in A.N. 100 rivet. We shall be glad to quote on any special dimpling tools from blue print.

TOPFLIGHT TOOL CO.
Aircraft Tools
TOWSON—4, MARYLAND
P. O. Box 6728 Phone Towson 1169

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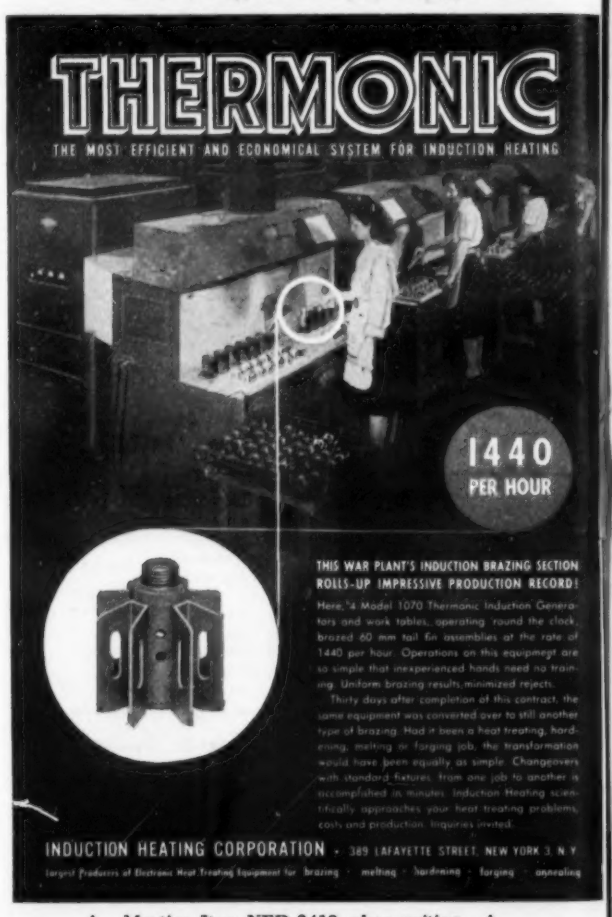

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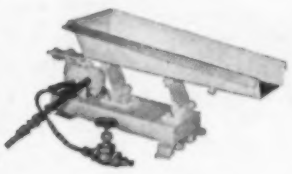
SYNTRON

WATER, AIR or OIL OPERATED

"Hydra-Pulse" VIBRATORS "Hydra-Pulse" FEEDERS



with adjustable power on those troublesome bins, hoppers and chutes to keep their contents agitated and free-flowing.

under those troublesome bins and hoppers to regulate their discharge by valve control of the power and of the rate of flow.

"EXPLOSION PROOF"—water, air or oil operated to suit the application—for use in hazardous atmospheric locations or handling explosive materials.

Also available as complete Feeder Machines ready for operation—and as Packers and Jolters for increasing the net contents of containers.

Write us about your problem

SYNTRON CO., 405 Lexington, Homer City, Pa.

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WHEREVER WATER OR WATER SOLUTIONS ARE USED IN YOUR PRODUCTION PROCESSES CHANCES ARE YOU CAN SPEED UP PRODUCTION, SAVE MATERIALS, INSURE BETTER UNIFORMITY AND CUT WASTE BY Beckman—CONTROLLING THE pH OF YOUR PROCESS SOLUTIONS!

Let Our Engineers Help You! They have had wide experience in adapting pH control to modern industrial operations . from electro-plating to boiler feed water control, chemical processes to waste-disposal. They will gladly make recommendations to fit YOUR problem.

There is a size and type of Beckman pH instrument for every size plant—for every application. Write for literature!

NATIONAL TECHNICAL LABORATORIES • SOUTH PASADENA, CALIFORNIA

Beckman HAS PIONEERED EVERY MAJOR DEVELOPMENT IN MODERN pH CONTROL AND EQUIPMENT

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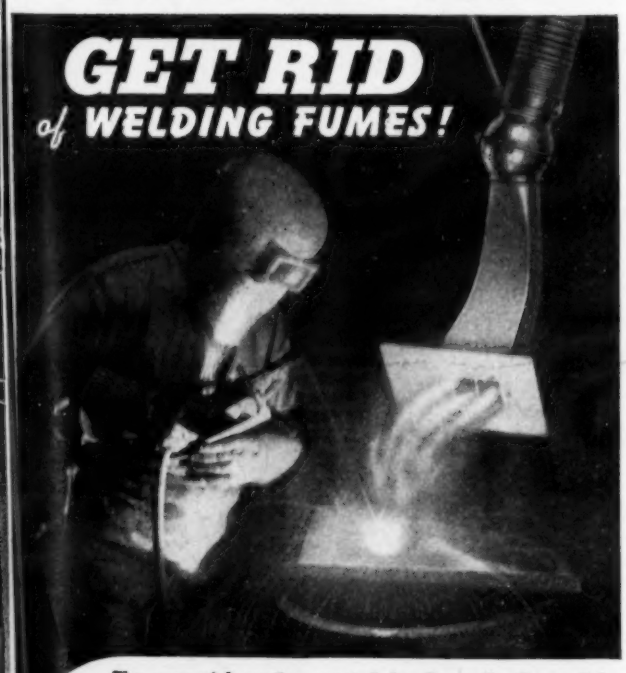
GET RID of WELDING FUMES!



The powerful suction created by Ruemelin Fume Collectors draws out noxious gases, smoke and heat *at the source. Cleans shop air with minimum loss of building* heat. Covers maximum territory. Guards employee health. More than 1,000 serving war plants all over the nation. Shipped completely assembled, easy to install.

Write for Bulletin 37-C

RUEMELIN MFG. CO., 3883 N. Palmer St., Milwaukee 12, Wis.

RUEMELIN FUME COLLECTOR

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NEW EQUIPMENT DIGEST

Registered U. S. Patent Office

MECHANICAL IMPROVEMENTS • INDUSTRIAL LITERATURE
NEW PRODUCTS AND MATERIALS

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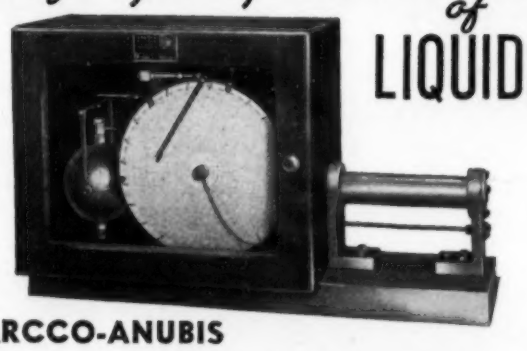
PRECISION-BUILT for PRECISE Specific Gravity Measurements of LIQUIDS



ARCCO-ANUBIS

Liquid Gravitometers

Indicate or record specific gravity or continuously flowing sample of line fluid as of 60° (or other predetermined temperature) with great accuracy and minimum time lag. Foreign liquids and gases automatically purged. Perfectly adapted to high-pressure operation. Maintain accuracy with minimum attention. SEND FOR BULLETIN NO. 111-A.

HUNDREDS IN USE in refineries, gasoline plants, and pipelines of MAJOR COMPANIES.
Quick Delivery

American RECORDING CHART CO.
3113 East 11th Street • • Los Angeles 23, Calif.

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BRUSH SURFACE ANALYZER

PRECISION for War and the Peace to come

The Brush Surface Analyzer provides a convenient, accurate and permanent chart record of the characteristics of finished surfaces, indicating in millionths of an inch the height, depth, and the pitch of each individual surface irregularity.

Write for complete details.

THE BRUSH DEVELOPMENT CO.
3333 PERKINS AVENUE • • • CLEVELAND, OHIO

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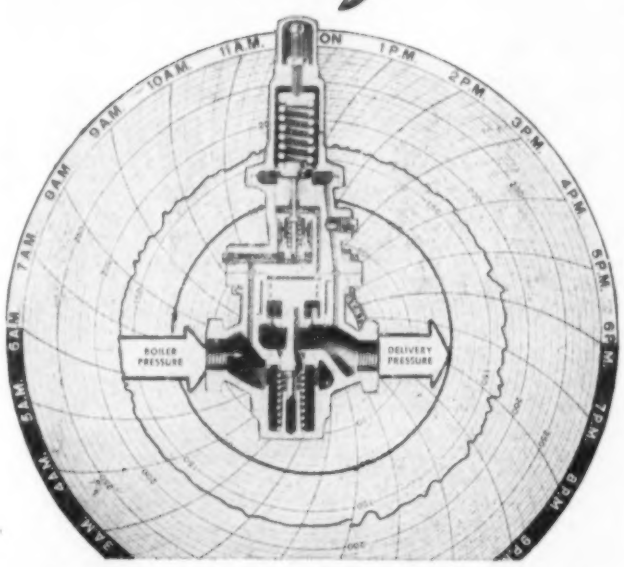
Steady



...with minimum maintenance. For instance, in one plant where twenty Foster Automatic Valves have been in service for fourteen years, no major repair jobs have yet been necessary. A few springs and diaphragms have been replaced, and valves have been ground according to schedule—but that's all.

And for *scheduled* maintenance, auxiliary valve units are INTERCHANGEABLE for all Type 37-G2 valves from one half to four inches, which *greatly speeds routine replacements.* Larger sizes also have this feature.

There are many other built in features which provide for quick servicing and checking of parts subject to wear. These features are illustrated in Foster Catalog 70, which also gives you answers to many of your regular problems. In addition, our engineering staff will be glad to assist you with any *special* problems.

FOSTER Type 37-G2 Standard Pressure Regulators

- Initial Steam pressures up to 1500 pounds
- Delivery pressures up to 600 pounds
- Total temperatures up to 900° F.
- Auxiliary (or pilot) operated
- Wide variety of spring ranges
- Alloys to suit pressures and temperatures

Illustrated catalog on the complete Foster line, with many pages of useful engineering data will be sent if the request is made on company letterhead. Simply ask for Catalog 70.

★ BUY MORE BONDS ★

FOSTER ENGINEERING Company
122 MONROE STREET, NEWARK, N. J.

4-FE-8

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C-F POSITIONERS

Save 72 Lifts

The Norberg Manufacturing Co., Milwaukee, have eliminated 72 lifts per unit by using a C-F Positioner on the production job illustrated. These complex weldments (Scavenging air headers for large Diesel engines) have to be "procedure-welded" and formerly required 72 crane lifts which took an average of 20 minutes apiece.

Now, the C-F Positioner moves the weldment through the routine positions under a push button control saving 24 hours crane time, 24 hours crane operator's time, and the same of both a sling man and the welder's time per weldment. . . . in other words saving three man-days and one crane-day on each header produced.

C-F Positioners come in 6 sizes—capacities to 30,000 lb. All are pedestal mounted, rotate 360° and tilt to 135° beyond horizontal.

Write for Bulletin WP-22

CULLEN-FRIESTEDT CO.,
1304 S. KILBOURN AVE. CHICAGO 23, ILLINOIS

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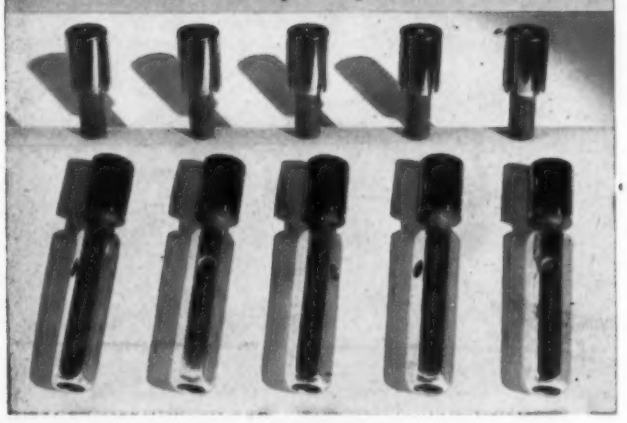
Wherever NORBIDE* Gages are used ··· wear-ever quality is assured.



The wear-resistance of NORBIDE Gages accounts for their exceptionally long life. In one industry, for example, NORBIDE Ring Gages are testing over a million abrasive pieces before wear exceeds a small tolerance. Your regular supplier can provide NORBIDE Gages. If making your own gages, order NORBIDE Gage Blanks from Norton Company. *NORBIDE is registered trade mark for Norton Boron Carbide, hardest material made by man.*

NORTON COMPANY
Worcester 6, Massachusetts

Hardest material made by man

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Hammond ANNOUNCES A NEW CHIP BREAKER AND FINISHING GRINDER FOR CARBIDE TOOLS

Hammond engineers now present to you this new Heavy Duty Chipbreaker and Tool Grinder with all the latest, practical operational features for fast, accurate chipbreaker groove grinding and diamond wheel finishing. It features the new Any Angle Vise (standard equipment) that gives you an easy, simple method of obtaining correct grinding angles. ½ HP motor—V-belt drive permits the use of any electrical specifications.

Hammond Machinery Builders INC.
KALAMAZOO 54, MICHIGAN

628 Douglas Ave., Eastern Branch 71 W. 23rd St., New York 10, N. Y.

▲ Mention Item NED-2429 when writing ▲

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REVOLVATOR PORTABLE ELEVATORS

1+1=4

When You Use Our Mechanical Man

Two men plus REVOLVATOR piling 1200 lb. hogsheads in tobacco warehouse. Heavy cases, crates, rolls, bales, barrels or drums may be stacked with equal ease.

A REVOLVATOR plus two men can lift, pile or stack goods faster than four men by "main strength" method. Let REVOLVATOR help your manpower shortage. Twenty-seven models cover all usual needs.

Tops: hinged or telescopic; hoists: electric with push button control, hand or combination; bases: revolvable, fixed, or skid types. Moderate prices which enable them to quickly pay for themselves in time and labor saved.

Send for special folder NED showing how you can free men for war by using REVOLVATOR mechanical men and RED GIANT LIFTRUCKS.

REVOLVATOR Co.
DESIGNERS AND MANUFACTURERS OF MATERIAL HANDLING EQUIPMENT
2032 86th St. NORTH BERGEN, N. J. Since 1904

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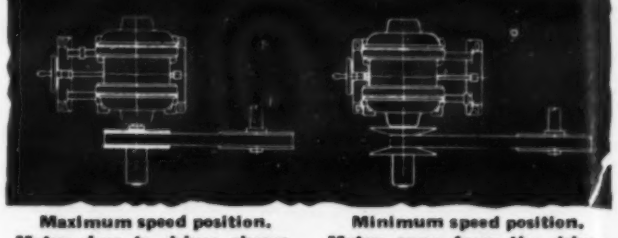
MATCH YOUR *Speed* TO YOUR JOB!
install
IDEAL VARIABLE *Speed*



Maximum speed position. Motor close to driven sheave. V-Belt at largest pitch diameter.

Minimum speed position. Motor away from the driven sheave. V-Belt at smallest pitch diameter.

IDEAL Variable Speed gives your machines a wide range-of-speeds up to 3 to 1 ratio—to suit different jobs, different employees, different materials. Easy to install—sizes up to 8 H.P. **Inexpensive.**

Write for FREE—52 page Transmission Handbook

IDEAL Sycamore
★ IDEAL COMMUTATOR DRESSER CO. ★
1032 PARK AVE. SYCAMORE, ILL.

Sales Offices in all Principal Cities
In Canada: Irving Smith Ltd., Montreal, Quebec

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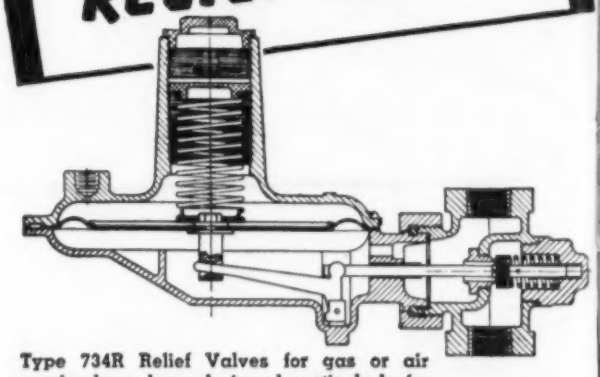
FISHER
★ TYPE 734R RELIEF VALVE



Type 734R Relief Valves for gas or air service have been designed particularly for small capacity and low pressure service. Sizes ¾", 1" and 1¼" are available for pressures up to 7 lbs. per square inch. Sizes 1½" and 2" are intended for pressures up to 3½ lbs. per square inch. These valves may also be used for vacuum breaker service by installing a control line from the regulator vent to the vacuum source. Write today for complete details.

FISHER GOVERNOR COMPANY
1427 Fisher Bldg., Marshalltown, Ia.

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In their **INSTRUMENT OVERHAUL** *Manuals -*

ECLIPSE-PIONEER
division of Bendix Aviation Corp.

Recommend **L&R CLEANING & RINSING SOLUTIONS**

L&R Precision Cleaning Equipment is used by the Army, Navy and more than 200 War Industries to CLEAN - RINSE - POLISH - DRY parts too difficult to clean manually or by any other method . . . instruments, meters, gauges, electronic tubes, bearings, jewels, crystals and related small parts.

For particularly difficult cleaning problems submit units for test cleaning in L&R Laboratory. A complete report with recommendations will be furnished without cost or obligation.

WRITE FOR COMPLETE CATALOG DATA ON L&R PRECISION CLEANING MACHINES AND SOLUTIONS

•

L&R MANUFACTURING COMPANY
577 ELM STREET
ARLINGTON • NEW JERSEY

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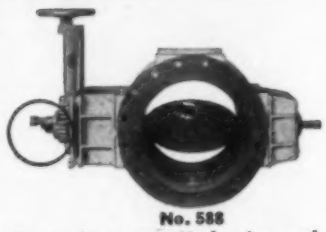
Forestall Valve Inaction

with Declutching Unit and Hand Wheel



No. 588

If it is desirable to install a manually controlled valve and, at a later date, it becomes advisable to obtain some type of prime mover for automatic control, the prime mover can be installed in the field.

A power failure will cause a power operated valve to be inoperative. Such is not the case, however, when a declutching unit (patent applied for) and hand wheel are provided. Likewise, the removal of the prime mover for maintenance, does not result in valve inaction since the valve can be operated manually at any time simply by removing the pull pin from the link which connects the diaphragm reach rod or piston to the link.

Investigate the many advantages of R-S Butterfly Valves (15 to 900 psi) and especially the merits of the R-S declutching unit and hand wheel.

VALVE DIVISION
R-S PRODUCTS CORPORATION
4527 Germantown Avenue, Philadelphia 44, Pa.

R-S Streamlined BUTTERFLY VALVES

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Simplified, Inexpensive
COAL HANDLING FOR SMALL BOILER ROOMS

with

• DETROIT ELECTRIC HOIST AND BUCKET

The installation consists of a small compact, *Detroit* Electric Hoist, push button controlled, running on an overhead track, and an ingenious, hopper type coal bucket. The equipment is inexpensive. A large volume of coal can be handled quickly by just one man. The boiler room is kept clean. The bucket is detachable and is provided with casters so that it can be readily wheeled in from the coal pile.

These installations are money and time savers wherever they have been made. Write us today for information on capacities, dimensions of hoist and bucket, and other details which will be of interest if you have a boiler room.

DETROIT HOIST & MACHINE CO.
8212 Morrow St., Detroit 11, Mich.

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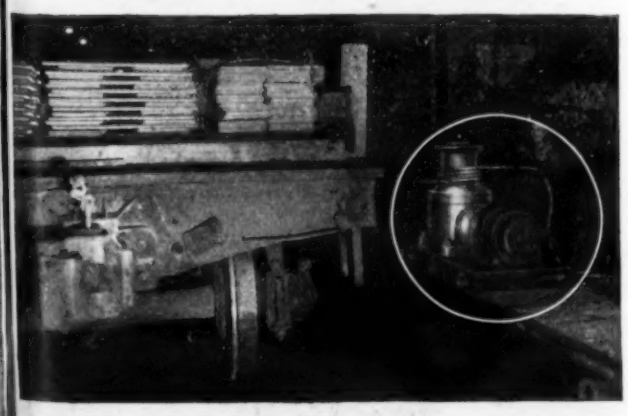
LINK-BELT CAR SPOTTER
MOVES CARS OF STEEL



In a well known steel plant, this No. 10A, L-B Car Spotter has eliminated the necessity of taking a crew of men from vital war production or waiting for a switch engine to move cars.

In every industry, thousands of L-B Car Spotters are in daily service moving cars and doing other back-breaking jobs quickly and easily at very low cost. Link-Belt Car Spotters are furnished as stationary or portable units in two sizes, with 5 or 10 H.P. motors, for rope pull of 5,000—and 10,000 pounds at a speed of 45 F.P.M.

9506

LINK-BELT COMPANY, 2410 W. 18th St., Chicago, Ill.
Send copy of Link-Belt Car Spotter Folder No. 1992.
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Company.....
City ..... State.....

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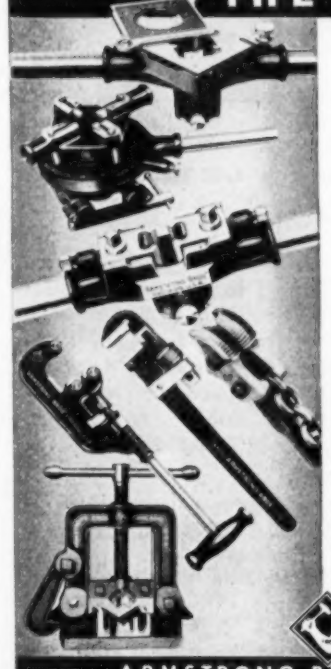
Look for the Arm-and-Hammer
ARMSTRONG BROS.
PIPE TOOLS



The "ARMSTRONG BROS." Line of Pipe Tools is the most extensive manufactured, including:

Adjustable Dies and Stocks
Solid Dies and Stocks
Receding Threaders and Chasers
Hinged Open-Side and Chain Pipe Vises
"Drop Forged," "Combination," "Saunders Type" and "Barnes Type" Pipe Cutters and Knife Blade Cutter Wheels
Drop Forge Pipe Wrenches, Chain Wrenches and Chain Tongs
Ratchet Pipe Reamers, etc.

Each is an improved tool—a handier tool with drop forged, hardened or alloy steel parts wherever they will add strength, balance or tool life.

Write for Catalog C-39a

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
307 N. FRANCISCO AVE. CHICAGO, U. S. A.
Eastern Warehouse & Sales: 199 Lafayette St., New York

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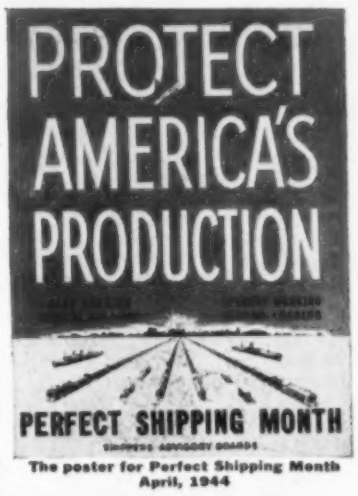
Safe Packing—

FIRST STEP IN PERFECT SHIPPING TO...



The poster for Perfect Shipping Month April, 1944

The last step in war production—the one that determines the value of all the labor that has gone before—is the *safe packing* of materials for delivery. Damage in transit wastes ALL that has been put into a shipment—and must be prevented.

This month the men and women of production renew their vow to the fighting front—"we will make the best... deliver it in the best condition."

This month accents Signode Steel Strapping Company's *year-round* job of giving production the best in shipping safety, and service.

Call on your nearby Signode representative at any time—to assist you on any shipping problem.

SIGNODE Steel Strapping Company
2632 N. Western Ave., Chicago 47, Ill.
Brooklyn, N. Y.: 378 Furman St.
San Francisco, Calif.: 467 Bryant St.

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You Name It... We'll Solve It!

THERE'S at least one "tough weighing problem" in every industrial plant. Name yours! We believe we can solve it for you.

What Fairbanks-Morse has done for others can be done for you—wherever accurate weighing is a factor—in all types of industries.

Here are a few of the many *plus* jobs that Fairbanks-Morse Scales can do in your plant.

- Count large or small parts
- Weigh and print records of carloads in motion
- Print shipping records—incoming and outgoing
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- Record flow of liquids
- Automatically control aggregates
- Guard secret formulas in compounding
- Control batching of various materials
- Prevent costly weighing errors

For further information, write Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

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DIESEL ENGINES, PUMPS, MOTORS, GENERATORS, WATER SYSTEMS, SCALES, STOKERS, FARM EQUIPMENT, RAILROAD EQUIPMENT
Scales

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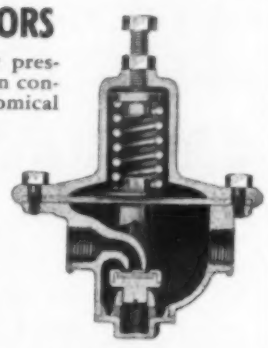
WHERE PERFORMANCE COUNTS...
Use
MASONEILAN REGULATORS

In every type of industry, wherever pressure regulators are used, Masoneilan controls assure dependable and economical operation. They hold pressures exactly where you want them, providing accurate performance under all operating conditions. The thousands of Masoneilan pressure reducing regulators used throughout industry are ample proof of their reliability to give long-lived service. Some Masoneilan pressure regulators are now available for other than war industries for maintenance and replacement. Write for complete information and catalog 71.



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for Water Service

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New York Philadelphia Pittsburgh Tulsa Toledo Chicago
Atlanta St. Louis San Francisco Los Angeles Houston
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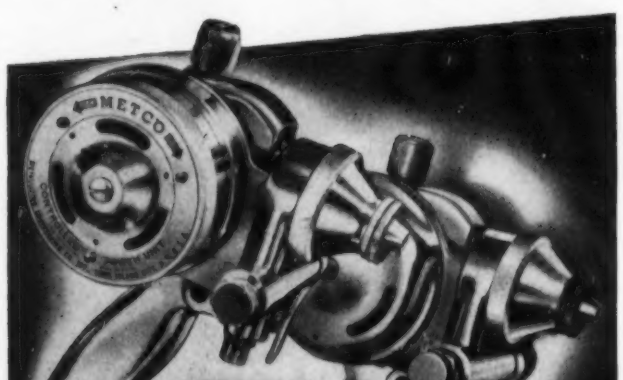
Putting-On Tools
for worn or mis-machined parts



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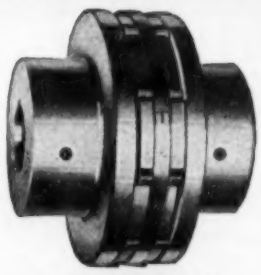
EFFICIENT ANSWERS

Industry's call taxes present motors to greatest capacity. Overloading is a necessity. Enable your motors to give maximum performance by *efficiently* correcting misalignment, absorbing vibration and shock, with L-R.



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L-R FLEXIBLE COUPLINGS

Floating cushions free to deform to pulsation, surge, reverse, every emergency. Always in sight for inspection. No shutdowns for changes. No lubrication.

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American Phillips Screws are saving an average of 50% of war-production assembly time for two reasons:

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Put the Screws on the Axis
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Single Piece

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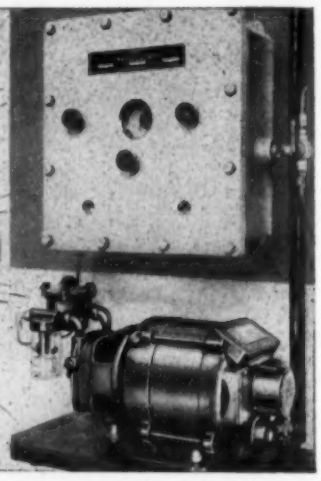
IN Hazardous Applications such as this COMBUSTIBLE GAS ALARM



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GAST ROTARY AIR
MOTORS • COMPRESSORS
VACUUM PUMPS

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Increase Production . . . Improve Quality . . . Slash Replacement Costs and Headaches . . . with the Paasche Type CUB High-Pressure Airbrush. Its light weight and perfect balance enable operators to work longer hours at full production. Provides greater coverage with perfect atomization. Sturdily constructed; the CUB stays on the job! For further details on this Airbrush and other Manual or Automatic Paasche Airpainting Equipment, send for Catalog. Address Paasche Airbrush Co., 1949 Diversey Parkway, Chicago 14, Illinois.

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Paasche AIRPAINTING EQUIPMENT

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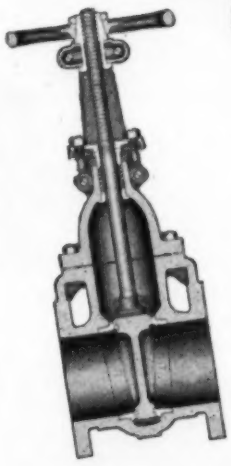
HANDY FACTS ABOUT CRANE STANDARD IRON GATE VALVES



1. Straight-through ports give streamline flow.
2. Body is strengthened to resist line stresses.
3. Full-length guides keep disc travel true.
4. Extra deep stuffing box lengthens packing life.
5. Powerful stem with tee-head disc connection gives positive seating.

Made in all types and sizes: Non-rising stem, OS&Y, Quick-opening, Underwriters' patterns, Marine Cargo. Flanged, screwed, or hub ends.

YOUR PRIORITY may entitle you—now—to these valves and other items in the complete Crane line. Your local Crane Representative will be glad to advise you. Crane Co., 836 S. Michigan Avenue, Chicago 5, Illinois.

CRANE *Anything for Pipe Lines—You Can Get It From Crane!*

VALVES • FITTINGS • PIPE • PLUMBING • HEATING • PUMPS

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World's Toughest Wire Brushes

Black & Decker Whirlwind Wire Wheel Brushes have each tuft of wire locked in place by a patented anchor—separately, securely, to stay! Choice of 4", 6", 7", 8", 10" and 12" sizes, three thicknesses, three gauges of wire. Order from your Black & Decker Distributor. The Black & Decker Mfg. Co., 762 Pennsylvania Ave., Towson—4, Md.

LEADING DISTRIBUTORS EVERYWHERE SELL Black & Decker PORTABLE ELECTRIC TOOLS

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with the New ZAGAR MULTIPLE COLLET HOLDING FIXTURE

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Get New Bulletin N-4-M

GOOD DISTRIBUTORS WANTED

ZAGAR TOOL, INC.
23880 Lakeland Blvd. Cleveland, Ohio

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No. "300" ELECTRODE HOLDER

FIRST TO GUARANTEE 100% Insulated—Electrodes Used to BUTTS

★ NO CLAMP HANDLE—NO SPRINGS
Nothing to interfere with workers or get out of order to cause delays.

★ SOLDERLESS CABLE CONNECTOR
Permits quick detach of holder from cable, no time wasted.

★ ONE MODEL—300 AMPERES
For universal work taking smallest electrodes up to 5/16 in. inclusive.

★ BALANCED—LIGHT WEIGHT—STREAMLINED
For greater efficiency, more work, less fatigue.

★ AUTOMATIC LOCKING BARREL
Stub can be removed with one hand and electrode replaced in a jiffy.

Distributors Wanted for All Territories!

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Manufacturers of PALMGREN PRODUCTS for Over 25 Years
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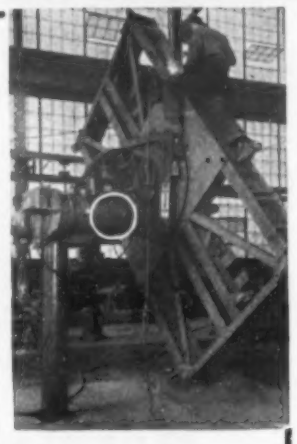
Stearns MAGNETIC

BRAKES are IMPORTANT on WELDING Positioner



Stearns Magnetic Disc Brakes (in circle) are important for motor control on the popular Cullen-Friestedt welding positioner. They prevent coasting or overrunning of the rotating or tilting tables.

This is only one of many applications efficiently and economically solved with Stearns Magnetic Brakes. Why not have us take a look at any possible problem you may have that requires stopping of rotating machinery. It may be in your plant or in your product.

Typical Motor Application

With our many years of pioneering experience in developing magnetic friction devices it is possible we can be of definitely profitable assistance to you. We've helped many engineers. How about you?

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SEPARATORS—CLUTCHES—PULLEYS—DRUMS—MAGNETS

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Equipment of any kind performs better, lasts longer and costs less for operation and maintenance when all moving parts are protected by Timken Tapered Roller Bearings.

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To help bring Victory closer and protect your investment afterwards use Timken Bearings at every suitable position in your machines. The Timken Roller Bearing Company, Canton, Ohio.

"All There Is **TIMKEN** In Bearings"
TAPERED ROLLER BEARINGS

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Prelude TO A PERFECT FINISH

CHICAGO MOUNTED WHEELS and small GRINDING WHEELS

A complete range of styles, grains and sizes up to 3" in diameter to give you a perfect finish on every job.

PROMPT DELIVERY

Specialization — with full WPB approval—on sizes 3" in diameter and under, means no waiting. Let us take care of your present and post-war requirements.

★ Half a Century of Specialization has Established our Reputation as the Small Wheel People of the Industry.

Just as the prelude to a new world is better tools of war, so the prelude to a perfect finish is better grinding wheels. Today's standards of finishes are far and beyond those of yesterday. To acquire them without sacrifice of production time is a goal which everyone seeks.

Finish must now be measured in micro inches. That's where the new Chicago **FV BOND** Wheels excel. They give a precision smoothness so intensified that it passes any surface analyzer test, in many cases eliminating hand lapping and auxiliary finishing operations.

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New Literature—Continued

COMMERCIAL LABORATORIES — 32-page "Directory of the American Council of Commercial Laboratories", provides information about the scope of activities of independent laboratories and advantages to be derived from utilizing their services in solution of scientific, engineering, testing and inspection problems—copies available from American Council of Commercial Laboratories, Executive Secretary A. J. Nydick, 63 Wall St., New York 5, N. Y.

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HYDRAULIC TORQUE CONVERTERS—16-page illustrated bulletin No. 135 concerns function, operation and installation of hydraulic torque converters—several models are described in detail—issued by Twin Disc Clutch Co., Hydraulic Div., Rockford, Ill.

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CAST IRON PIPE JOINT—4-page illustrated bulletin re-introduces style 85 Bellmaster joint for cast-iron pipe which was withdrawn from market at beginning of war but is again available for delivery—issued by Dresser Mfg. Co., 4100 Fisher Ave., Bradford, Pa.

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POWER TAKE-OFF—Illustrated bulletin No. E-166 shows how Davey power take-off enables truck engine to power such auxiliary equipment as pumps, generators, air compressors, concrete mixers and welders—issued by Power Take-Off Div., Davey Compressor Co., Kent, O.

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SURFACE PLATES—4-page illustrated folder sets forth new uses for granite surface plates, such as spotting—introduces new special sizes available up to 4 x 6 feet—issued by The Herman Stone Co., 324 Harries Bldg., Dayton 2, O.

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GRINDING WHEELS—4-page illustrated folder announces that Norton grinding wheels of 57 Alundum abrasive are now available for all jobs where increased production is vital—issued by Norton Co., 200 New Bond St., Worcester, Mass.

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MATERIALS HANDLING MACHINERY—24-page illustrated folder outlines the facilities and service of company in production of materials handling machinery—history of company is traced—issued by Robins Conveyors, Inc., 270 Passaic Ave., Passaic, N. J.

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CRATE ASSEMBLY—Illustrated portfolio of instruction charts shows simple steps necessary to assemble and close all types of General wirebound boxes and crates—issued by General Box Co., Corner of Dearborn & Illinois Sts., Chicago, Ill.

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WATER SOFTENERS—16-page illustrated bulletin No. 603 describes zeolite water softeners and other water conditioning equipment—covers all types and sizes for any application—issued by Elgin Softener Corp., Elgin, Ill.

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